GARMIN

# Embraer Prodigy® Flight Deck 300

## Cockpit Reference Guide

## Embraer Phenom 300

FLIGHT INSTRUMENTS
ENGINE & AIRFRAME SYSTEMS
NAV/COM/TRANSPONDER/AUDIO PANEL
AUTOMATIC FLIGHT CONTROL SYSTEM
GPS NAVIGATION
FLIGHT PLANNING
PROCEDURES
HAZARD AVOIDANCE
ADDITIONAL FEATURES
ABNORMAL OPERATION
ANNUNCIATIONS & ALERTS
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This manual reflects the operation of System Software version 0734.7A or later for the Embraer Phenom 300. Some differences in operation may be observed when comparing the information in this manual to earlier or later software versions.

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***WARNING:*** *Navigation and terrain separation must NOT be predicated upon the use of the terrain avoidance feature. The terrain avoidance feature is NOT intended to be used as a primary reference for terrain avoidance and does not relieve the pilot from the responsibility of being aware of surroundings during flight. The terrain avoidance feature is only to be used as an aid for terrain avoidance. Terrain data is obtained from third party sources. Garmin is not able to independently verify the accuracy of the terrain data.*

***WARNING:*** *The displayed minimum safe altitudes (MSAs) are only advisory in nature and should not be relied upon as the sole source of obstacle and terrain avoidance information. Always refer to current aeronautical charts for appropriate minimum clearance altitudes.*

***WARNING:*** *Do not use outdated database information. Databases used in the system must be updated regularly in order to ensure that the information remains current. Pilots using any outdated database do so entirely at their own risk.*

***WARNING:*** *Do not use basemap (land and water data) information for primary navigation. Basemap data is intended only to supplement other approved navigation data sources and should be considered as an aid to enhance situational awareness.*

***WARNING:*** *Traffic information shown on system displays is provided as an aid in visually acquiring traffic. Pilots must maneuver the aircraft based only upon ATC guidance or positive visual acquisition of conflicting traffic.*

***WARNING:*** *Do not use data link weather information for maneuvering in, near, or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.*

***WARNING:*** *Do not use the indicated data link weather product age to determine the age of the weather information shown by the data link weather product. Due to time delays inherent in gathering and processing weather data for data link transmission, the weather information shown by the data link weather product may be significantly older than the indicated weather product age.*

***WARNING:*** *The Prodigy® Integrated Flight Deck, as installed in the Embraer Phenom 300 aircraft, has a very high degree of functional integrity. However, the pilot must recognize that providing monitoring and/or self-test capability for all conceivable system failures is not practical. Although unlikely, it may be possible for erroneous operation to occur without a fault indication shown by the system. It is thus the responsibility of the pilot to detect such an occurrence by means of cross-checking with all redundant or correlated information available in the cockpit.*

***WARNING:*** *For safety reasons, system operational procedures must be learned on the ground.*

***WARNING:*** *The United States government operates the Global Positioning System and is solely responsible for its accuracy and maintenance. The GPS system is subject to changes which could affect the accuracy and performance of all GPS equipment. Portions of the system utilize GPS as a precision electronic NAVigation AID (NAVAID). Therefore, as with all NAVAIDs, information presented by the system can be misused or misinterpreted and, therefore, become unsafe.*

***WARNING:*** *To reduce the risk of unsafe operation, carefully review and understand all aspects of the Prodigy® Pilot's Guide documentation and the Embraer Phenom 300 Airplane Flight Manual. Thoroughly practice basic operation prior to actual use. During flight operations, carefully compare indications from the system to all available navigation sources, including the information from other NAVAIDs, visual sightings, charts, etc. For safety purposes, always resolve any discrepancies before continuing navigation.*

***WARNING:*** *The illustrations in this guide are only examples. Never use the system to attempt to penetrate a thunderstorm. Both the FAA Advisory Circular, Subject: Thunderstorms, and the Aeronautical Information Manual (AIM) recommend avoiding "by at least 20 miles any thunderstorm identified as severe or giving an intense radar echo."*

***WARNING:*** *Lamp(s) inside this product may contain mercury (HG) and must be recycled or disposed of according to local, state, or federal laws. For more information, refer to our website at www.garmin.com/aboutGarmin/environment/disposal.jsp.*

***WARNING:*** *Because of variation in the earth's magnetic field, operating the system within the following areas could result in loss of reliable attitude and heading indications. North of 72° North latitude at all longitudes. South of 70° South latitude at all longitudes. North of 65° North latitude between longitude 75° W and 120° W. (Northern Canada). North of 70° North latitude between longitude 70° W and 128° W. (Northern Canada). North of 70° North latitude between longitude 85° E and 114° E. (Northern Russia). South of 55° South latitude between longitude 120° E and 165° E. (Region south of Australia and New Zealand).*

***WARNING:*** *Do not use GPS to navigate to any active waypoint identified as a 'NON WGS84 WPT' by a system message. 'NON WGS84 WPT' waypoints are derived from an unknown map reference datum that may be incompatible with the map reference datum used by GPS (known as WGS84) and may be positioned in error as displayed.*

***CAUTION:*** *The PFD and MFD displays use a lens coated with a special anti-reflective coating that is very sensitive to skin oils, waxes, and abrasive cleaners. CLEANERS CONTAINING AMMONIA WILL HARM THE ANTI-REFLECTIVE COATING. It is very important to clean the lens using a clean, lint-free cloth and an eyeglass lens cleaner that is specified as safe for anti-reflective coatings.*

***CAUTION:*** *The system does not contain any user-serviceable parts. Repairs should only be made by an authorized Garmin service center. Unauthorized repairs or modifications could void both the warranty and the pilot's authority to operate this device under FAA/FCC regulations.*

***NOTE:*** *All visual depictions contained within this document, including screen images of the panel and displays, are subject to change and may not reflect the most current system and databases. Depictions of equipment may differ slightly from the actual equipment.*

***NOTE:*** *This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

***NOTE:*** *The data contained in the terrain and obstacle databases comes from government agencies. Garmin accurately processes and cross-validates the data, but cannot guarantee the accuracy and completeness of the data.*

***NOTE:*** *This product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This notice is being provided in accordance with California's Proposition 65. If you have any questions or would like additional information, please refer to our web site at www.garmin.com/prop65.*

***NOTE:*** *Interference from GPS repeaters operating inside nearby hangars can cause an intermittent loss of attitude and heading displays while the aircraft is on the ground. Moving the aircraft more than 100 yards away from the source of the interference should alleviate the condition.*

***NOTE:*** *Use of polarized eyewear may cause the flight displays to appear dim or blank.*

***NOTE:*** *The FAA has asked Garmin to remind pilots who fly with Garmin database-dependent avionics of the following:*

- *It is the pilot's responsibility to remain familiar with all FAA regulatory and advisory guidance and information related to the use of databases in the National Airspace System.*
- *Garmin equipment will only recognize and use databases that are obtained from Garmin or Jeppesen. Databases obtained from Garmin or Jeppesen are assured compliance with all data quality requirements (DQRs) by virtue of a Type 2 Letter of Authorization (LOA) from the FAA. A copy of the Type 2 LOA is available for each database and can be viewed at http://fly.garmin.com by selecting 'Type 2 LOA Status.'*
- *Use of a current Garmin or Jeppesen database in your Garmin equipment is required for compliance with established FAA regulatory guidance, but does not constitute authorization to fly any and all terminal procedures that may be presented by the system. It is the pilot's responsibility to operate in accordance with established AFM(S) and regulatory guidance or limitations as applicable to the pilot, the aircraft, and installed equipment.*

***NOTE:*** *The pilot/operator must review and be familiar with Garmin's database exclusion list as discussed in SAIB CE-14-04 to determine what data may be incomplete. The database exclusion list can be viewed at www.flygarmin.com by selecting 'Database Exclusions List.'*

***NOTE:*** *The pilot/operator must have access to Garmin and Jeppesen database alerts and consider their impact on the intended aircraft operation. The database alerts can be viewed at www.flygarmin.com by selecting 'Aviation Database Alerts.'*

***NOTE:*** *If the pilot/operator wants or needs to adjust the database, contact Garmin Product Support to coordinate the revised DQRs.*

***NOTE:*** *Garmin requests the flight crew report any observed discrepancies related to database information. These discrepancies could come in the form of an incorrect procedure; incorrectly identified terrain, obstacles and fixes; or any other displayed item used for navigation or communication in the air or on the ground. Go to FlyGarmin.com and select 'Report An Aviation Data Error Report.'*

***NOTE:*** *The purpose of this Cockpit Reference Guide is to provide the pilot a resource with which to find operating instructions on the major features of the Prodigy® system more easily. It is not intended to be a comprehensive operating guide. Complete operating procedures for the system are found in the Prodigy® Flight Deck 300 Pilot's Guide.*

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| Part Number | Change Summary |
|---|---|
| 190-00761-00 | Initial release |
| 190-00761-01 | Added SMS texting<br>Updated database update procedures in the Appendix<br>Added other GDU 11.12 parameters |
| 190-0761-02 | Updated CAS messages<br>Updated SiriusXM Satellite Radio audio mute procedure<br>Added Pilot Profiles<br>Updated Database Update procedures<br>Added AC-U-KWIK Airport Directory capability<br>Updated GFDS registration procedure<br>Added Inset Map WX LGND Softkey<br>Added other GDU 12.11 parameters |
| 190-0761-03 | Added CPDLC<br>Added User Defined Holds<br>Added Maintenance Logs Page<br>Removed Reports Page<br>Added temperature compensated altitude<br>Added Steep Mode capability<br>Updated CAS and voice messages<br>Added other GDU 13.02 parameters |
| 190-0761-04 | Added Profile View<br>Added input data failure annunciations<br>Added Weather Radar overlay on the Navigation Map<br>Removed second DME option<br>Removed GDC 74B<br>Updated CAS messages<br>Updated CPDLC discussion<br>Added other GDU 14.02 parameters |

| Revision | Date of Revision | Affected Pages | Description |
|---|---|---|---|
| A | October, 2014 | All | Production release |

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# FLIGHT INSTRUMENTS

## SELECTING THE ALTIMETER BAROMETRIC PRESSURE SETTING

Turn the **BARO** Knob to select the desired setting.

## SELECTING STANDARD BAROMETRIC PRESSURE

Press the **BARO** Knob.

## CHANGE ALTIMETER BAROMETRIC PRESSURE SETTING UNITS

1) Press the **PFD** Softkey to display the second-level softkeys.
2) Press the **ALT UNIT** Softkey.
3) Press the **IN** Softkey to display the barometric pressure setting in inches of mercury (in Hg).

   **Or:**

   Press the **HPA** Softkey to display the barometric pressure setting in hectopascals.
4) Press the **BACK** Softkey to return to the top-level softkeys.

## SYNCHRONIZING THE ALTIMETER BAROMETRIC PRESSURE SETTINGS

1) Select the AUX-SYSTEM SETUP Page on the MFD.
2) Press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight BARO in the SYNCHRONIZATION Window.
4) Turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.

## SYNCHRONIZE CDI

1) Select the AUX-SYSTEM SETUP Page on the MFD.
2) Press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight CDI in SYNCHRONIZATION Window.
4) Turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.

## CHANGE NAVIGATION SOURCES

1) Press the **CDI** Softkey to change from GPS to VOR1 or LOC1. This places the light blue tuning box over the NAV1 standby frequency in the upper left corner of the PFD.
2) Press the **CDI** Softkey again to change from VOR1 or LOC1 to VOR2 or LOC2. This places the light blue tuning box over the NAV2 standby frequency.
3) Press the **CDI** Softkey a third time to return to GPS.

## ENABLE/DISABLE OBS MODE WHILE NAVIGATING WITH GPS

1) Press the **OBS** Softkey to select OBS Mode.
2) Turn the **CRS** Knob to select the desired course to/from the waypoint. Press the **CRS** Knob to slew the CDI Course Pointer to a course bearing directly to the waypoint.
3) Press the **OBS** Softkey again to disable OBS Mode.

## GENERIC TIMER

1) Press the **TMR/REF** Softkey, then turn the large **FMS** Knob to select the time field (hh/mm/ss). Turn the **FMS** Knobs to set the desired time, then press the **ENT** Key. The UP/DOWN field is now highlighted.
2) Turn the small **FMS** Knob to display the UP/DOWN window. Turn the **FMS** Knob to select 'UP' or 'DOWN', then press the **ENT** Key. 'START?' is now highlighted.
3) Press the **ENT** Key to START, STOP, or RESET the timer (if the timer is counting DOWN, it will start counting UP after reaching zero). Press the **CLR** Key or the **TMR/REF** Softkey to remove the window.

## CONFIGURE VSPEED BUGS INDIVIDUALLY

1) Press the **TMR/REF** Softkey.
2) Turn the large **FMS** Knob to highlight the desired Vspeed.
3) Use the small **FMS** Knob to change the Vspeed in 1-kt increments (when a speed has been changed from a default value, an asterisk appears next to the speed).

4) Press the **ENT** Key or turn the large **FMS** Knob to highlight the ON/OFF field.
5) Turn the small **FMS** Knob clockwise to ON or counterclockwise to OFF.
6) To remove the window, press the **CLR** Key or the **TMR/REF** Softkey.

## TURN VSPEED BUGS ON OR OFF BY CATEGORY

1) Press the **TMR/REF** Softkey.
2) Press the **MENU** Key.
3) Turn the **FMS** Knob to highlight the desired option.
4) Press the **ENT** Key. Press the **TMR/REF** Softkey to remove the window.

## SET MINIMUM DESCENT ALTITUDE/DECISION HEIGHT

1) Press the **TMR/REF** Softkey.
2) Turn the large **FMS** Knob to highlight the Minimums field.
3) Turn the small **FMS** Knob to select BARO, RAD ALT (optional) or TEMP COMP. OFF is selected by default. Press the **ENT** Key or turn the large **FMS** Knob to highlight the next field.
4) Use the small **FMS** Knob to enter the desired altitude. When BARO and TEMP COMP are selected, values from zero to 16,000 feet may be entered. When RAD ALT is selected, values from zero to 2,500 feet may be entered.
5) If TEMP COMP was selected, press the **ENT** Key or turn the large **FMS** Knob to highlight the next field and then enter the destination airport temperature (-59°C to 59°C). The temperature compensated altitude minimum is displayed below the previously enter minimum altitude value.
6) To remove the window, press the **CLR** Key or the **TMR/REF** Softkey.

## DISPLAYING WIND DATA

1) Press the **PFD** Softkey.
2) Press the **WIND** Softkey to display wind data below the Selected Heading.
3) Press one of the **OPTN** softkeys to change how wind data is displayed.
4) To remove the Wind Data Window, press the **OFF** Softkey.

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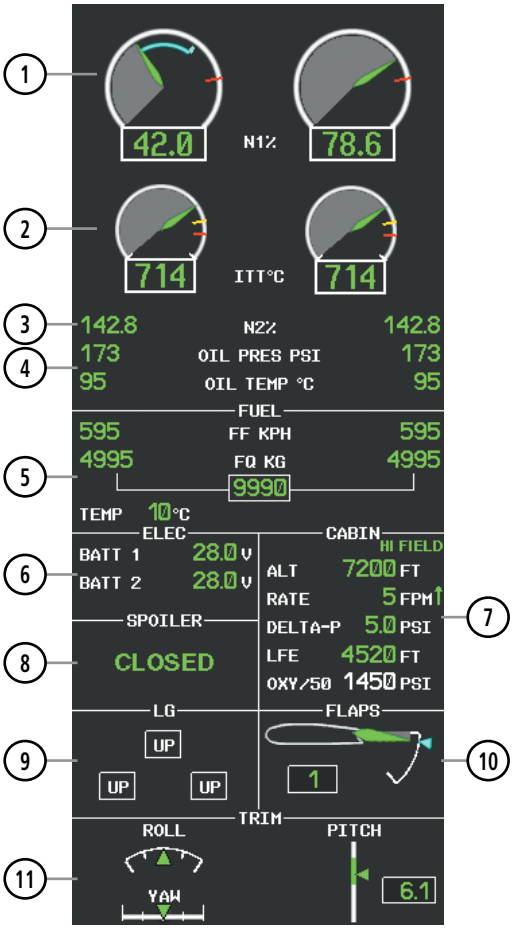
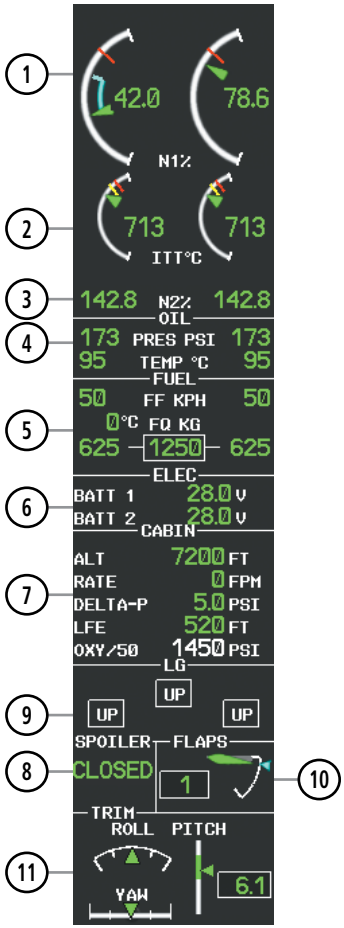
# ENGINE & AIRFRAME SYSTEMS

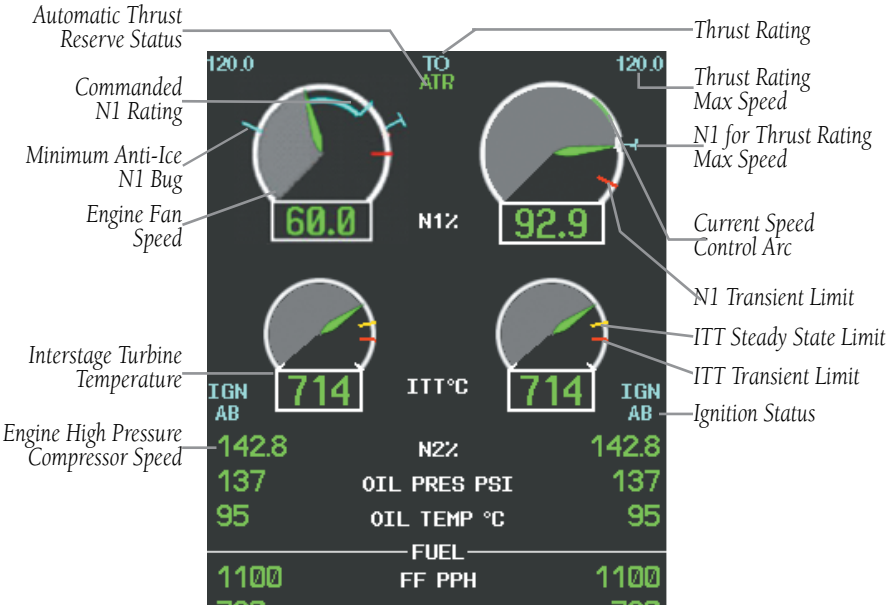



EIS Display (Normal Mode)




EIS Display (Reversionary Mode)

1. *Engine Fan Rotation Speed*
2. *Interstage Turbine Temperature (ITT)*
3. *Engine High Pressure Compressor Rotation Speed*
4. *Oil Pressure and Temperature*
5. *Fuel Display*
6. *Battery Voltmeter*
7. *Pressurization Display*
8. *Spoiler Status*
9. *Landing Gear Status*
10. *Flap Indicator*
11. *Trim Indicator*




**Engine Indications**

## Thrust Rating

| Indication | Thrust Rating |
|---|---|
| CRZ | Cruise |
| CLB | Climb |
| CON | Continuous |
| TO | Takeoff |
| GA | Go Around |

**Thrust Rating Indications**

### Selecting a thrust rating:

1) Select the **SYSTEM** Softkey.
2) Select the **ENG SET** Softkey
3) To choose the continuous thrust rating, select the **CON** Softkey,

   **Or**:

   To choose the maximum climb thrust rating, select the **CLB** Softkey.
4) Select the **BACK** Softkey to return to the previous softkey level.

## Automatic Thrust Reserve

| Indication* | Description |
|---|---|
| ATR | ATR enabled in both engines |
| ATR | ATR armed in both engines, but inactive |
| TO - RSV | ATR activated in at least one engine in Take Off mode |
| GA - RSV | ATR activated in at least one engine in Go-Around Mode |

** When no indication is shown, ATR has not been enabled or armed in both engines.*

**Automatic Thrust Reserve (ATR) Status**

## Disabling/enabling Automatic Thrust Reserve (ATR):

**1)** Select the **SYSTEM** Softkey.

**2)** Select the **ENG SET** Softkey to display the Takeoff Data Set Window.

**3)** To disable ATR, select the **ATR OFF** Softkey;

**Or**:

To enable ATR, select the **ATR ON** Softkey.

**4)** If desired, change the OAT while the Takeoff Data Set Window is displayed.

**5)** To confirm the selected takeoff settings and close the Takeoff Data Set Window, select the **ACCEPT** Softkey,

**Or**:

To cancel the operation, select the **BACK** Softkey.

## Takeoff Data Set Window

**Takeoff Data Set Window**

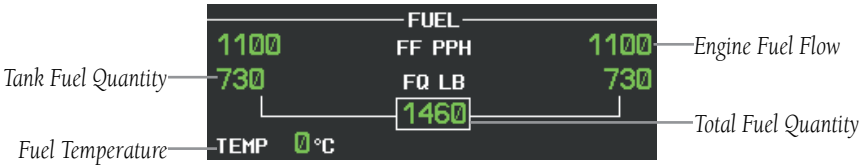
### Setting the Outside Air Temperature (OAT):

1) Select the **SYSTEM** Softkey.
2) Select the **ENG SET** Softkey to display the Takeoff Data Set Window.
3) To adjust the temperature in 1 °C increments, use the **OAT↑** and **OAT↓** softkeys.
4) If desired, change the ATR status while the Takeoff Data Set Window is displayed.
5) To confirm the selected takeoff settings and close the Takeoff Data Set Window, select the **ACCEPT** Softkey,

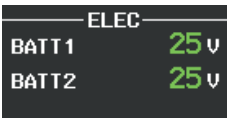
   **Or**:

   To cancel the operation, select the **BACK** Softkey.

## Fuel and Electrical Indications

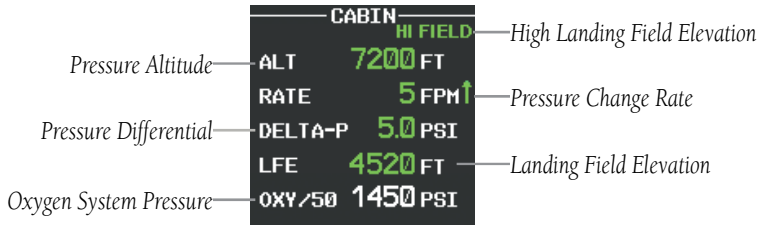



**Fuel Display**




**Electrical Display**

## Cabin Pressurization




**Cabin Pressure Display**

### Setting the displayed landing field elevation:

**1)** Select the **SYSTEM** Softkey.

**2)** Select the **LFE** Softkey.

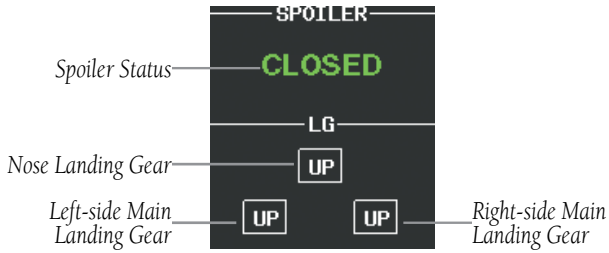
**3)** Select the **FMS LFE** Softkey to set the LFE to the value for the destination airport in the current flight plan.

**Or**:

Use the **±500** and **±50 FT** softkeys to set the desired elevation.

**4)** To confirm the new LFE value, select the **ACCEPT** Softkey.

## Spoiler and Landing Gear




**Spoiler and Landing Gear Indications**

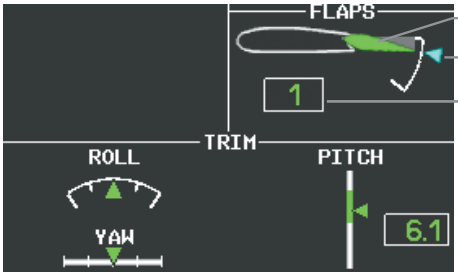
| Indication | Description |
|---|---|
| | Landing Gear Down |
| | Landing Gear Up |
| | Landing Gear Transitioning (Normal) |
| | Landing Gear Locked Down |
| | Landing Gear Locked Up |
| | Landing Gear Transitioning (Abnormal) |

**Landing Gear Position Indications**

| Indication | Description |
|---|---|
| | Invalid information |
| SPDBRK | Spoilers out of takeoff configuration |
| FAIL | Spoilers failed |
| CLOSED | Spoilers retracted |
| GND SPLR | Ground spoilers deployed |
| SPDBRK | Speedbrakes deployed |
| STEEP | Steep Mode enabled (optional) |

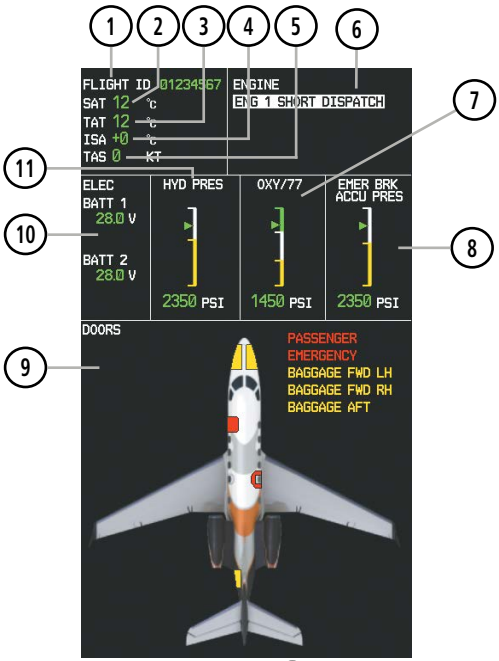
**Spoiler Indications**

## Flaps and Trim




Flap and Trim Indications

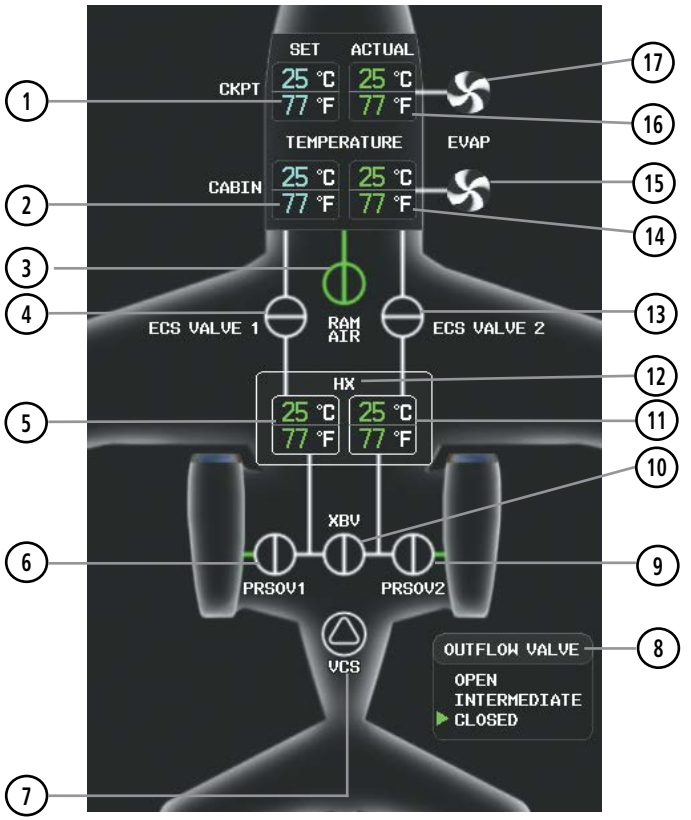
## SYNOPTICS




1. *Flight ID*
2. *Static Air Temperature (SAT)*
3. *Total Air Temperature (TAT)*
4. *International Standard Atmosphere (ISA)*
5. *True Airspeed (TAS)*
6. *Engine Dispatch Message Box*
7. *Oxygen*
8. *Emergency Brake Accumulator Pressure*
9. *Door Status*
10. *Electrical Status*
11. *Hydraulic Pressure*

System Status Synoptics Page

## Environmental Control System (ECS)



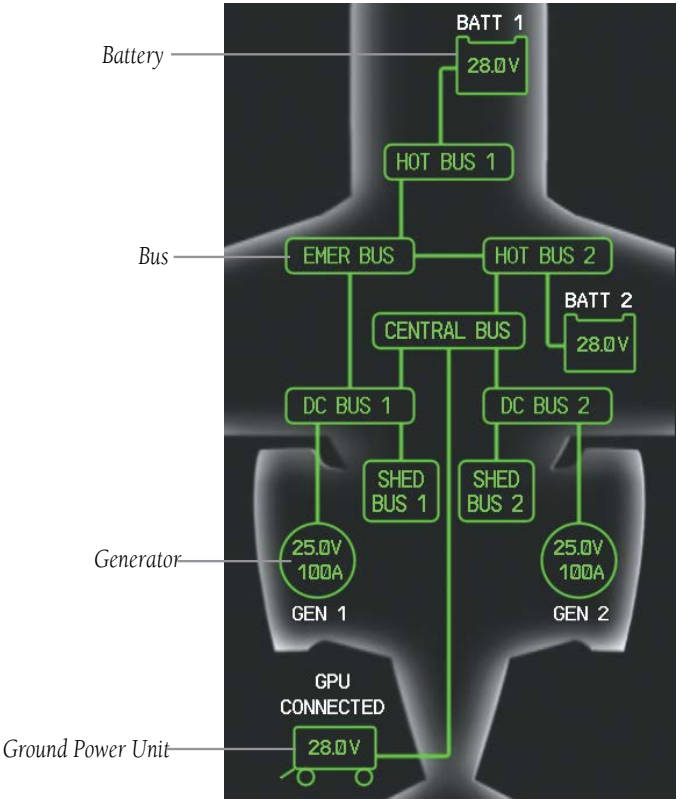

1. *Cockpit Temperature Setting*
2. *Cabin Temperature Setting*
3. *Ram Air Valve (RAV)*
4. *Environmental Control System Valve (ECS) 1*
5. *Cockpit Duct Temperature Setting*
6. *Pressure Regulating Shutoff Valve (PRSOV) 1*
7. *Vapor Cycle System (VCS)*
8. *Outflow Valve (OFV) Status**
9. *Pressure Regulating Shutoff Valve (PRSOV) 2*
10. *Crossbleed Valve Status (XBV)*
11. *Cabin Duct Temperature Setting*
12. *Heat Exchanger Cooling Pack Circuit*
13. *Environmental Control System Valve (ECS) 2*
14. *Actual Cabin Temperature*
15. *Cabin Evaporator Fan*
16. *Actual Cockpit Temperature*
17. *Cockpit Evaporator Fan*

**Environmental Control System Synoptics Page**

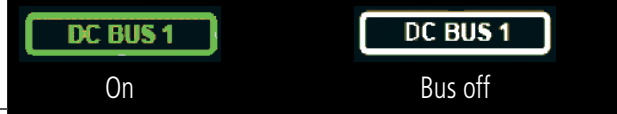
| Unit | Icons and Descriptions |
|---|---|
| Fan | On Off |
| Heat Exchanger | On Off |
| Vapor Cycle System | On Off |
| ECS Valve<br>Ram Air Valve | Open with flow Open, no flow Closed |
| Pressure Regulating Shutoff Valve (PRSOV)<br>Crossbleed Valve (XBV) | Open with flow Open, no flow Closed |

**Environmental Control System Unit Status Indications**

## Electrical

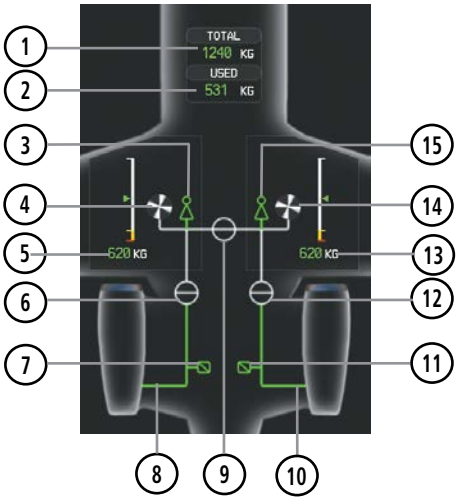



Electrical Synoptics Page

| Unit | Icons and Descriptions |
|---|---|
| Generator | N2>52% Bus off N2<52% |
| Bus |  DC BUS 1 On DC BUS 1 Bus off |
| Hot Bus | HOT BUS 1 Normal HOT BUS 1 Abnormal |
| Battery | Normal Abnormal |

**Electrical System Unit Status Indications**

## Fuel



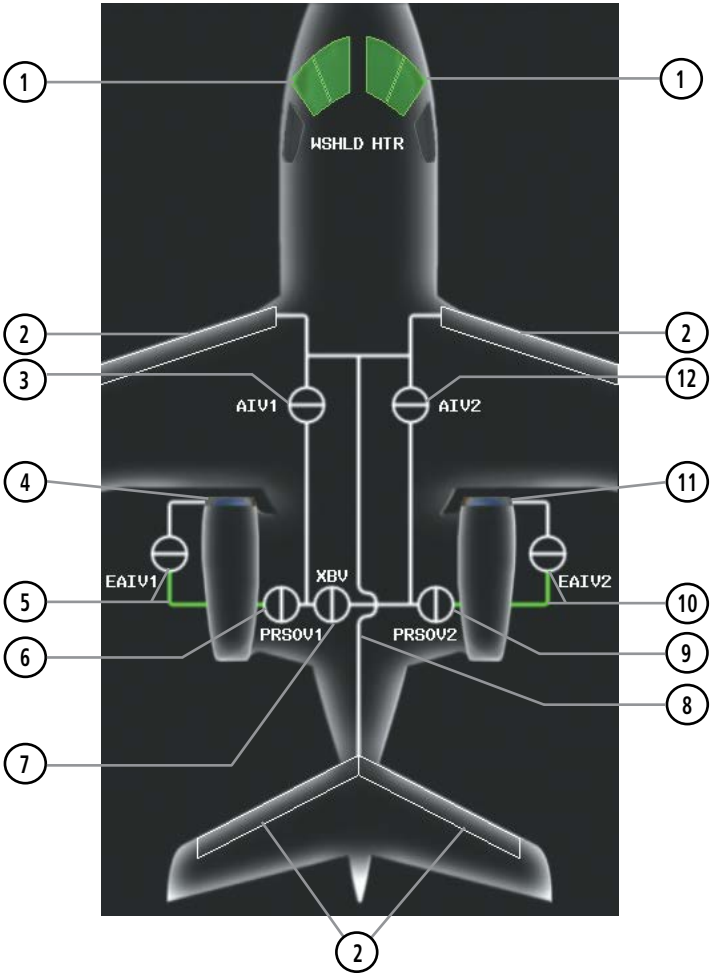

1. *Total Fuel*
2. *Fuel Used*
3. *Left Feed Ejector*
4. *Left DC Pump*
5. *Left Tank Fuel Quantity*
6. *Fuel 1 SOV*
7. *LH Pressure Switch*
8. *Left Engine Feed Line*
9. *Fuel Transfer SOV*
10. *Right Engine Feed Line*
11. *RH Pressure Switch*
12. *Fuel 2 SOV*
13. *Right Tank Fuel Quantity*
14. *Right DC Pump*
15. *Right Feed Ejector*

**Fuel Synoptics Page**

| Unit | Icons and Descriptions |
|---|---|
| Fuel Line | Operating Not operating |
| Feed Ejector | Operating Not operating |
| Fuel Pressure Switch | Operating Not operating |
| Valve | Open with flow Open, no flow In transit Closed |
| DC Pump | Operating Not operating |
| Fuel Transfer Valve | Open with flow Open, no flow In transit Closed |

**Fuel System Unit Status Indications**

## Ice Protection System



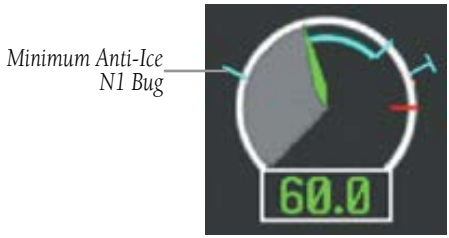

1. *Windshield Heaters*
2. *Anti-Ice Lines*
3. *Anti-Ice Valve (AIV) 1*
4. *Bleed Duct and Skin 1*
5. *Engine Anti Ice Valve (EAIV) 1 Valve and Bleed Line*
6. *Pressure Regulating Shut-Off Valve 1 (PRSOV 1)*
7. *Crossbleed Valve*
8. *Ice Protection Bleed Duct*
9. *Pressure Regulating Shut-Off Valve 2 (PRSOV 2)*
10. *Engine Anti Ice Valve (EAIV) 2 Valve and Bleed Line*
11. *Bleed Duct and Skin 2*
12. *Anti Ice Valve (AIV) 2*

**Ice Protection Synoptics Page**

| Unit | Icons and Descriptions |
|---|---|
| Anti Ice Line | Operating; Not operating |
| Crossbleed Valve (XBV)<br>Pressure Regulating Shutoff Valve (PRSOV) | Open with flow; Open, no flow; Closed |
| Anti Ice Valve (AIV)<br>Engine Anti Ice Valve (EAIV) | Open with flow; Open, no flow; Closed |

**Ice Protection System Unit Status Indications**

The Minimum Anti-Ice N1 Bug appears as a light blue tick mark on the N1 engine gauges. It indicates which N1 should be commanded to achieve full anti-ice capability. The bug is visible when the landing gear is extended and wing anti-ice is on, or when an engine or engine bleed air is lost. If the anti-ice capacity is not fully operational, the message "A-I LO CAPACITY" appears on the Crew Alerting System (CAS).




**Engine Minimum N1 Anti-Ice Indication**

Blank Page

# NAV/COM/TRANSPONDER/AUDIO PANEL

## ENTER OR CHANGE FLIGHT ID

1) Press the **TMR/REF** Softkey, then turn the large **FMS** Knob to highlight the Flight ID field.
2) Turn the small **FMS** Knob to enter the first character.
3) Turn the large **FMS** Knob to select the next field.
4) Turn the small **FMS** Knob to enter the next desired character.
5) Repeat steps 3 and 4 until the desired Flight ID is entered.
6) Press the **ENT** Key to update the Flight ID.

## ADF TUNING (OPTIONAL)

1) Press the **ADF/DME** Softkey.
2) Turn the small **FMS** Knob to enter the first digit of the desired ADF frequency.
3) Turn the large **FMS** Knob to select the next desired field.
4) Turn the small **FMS** Knob to enter the desired number.
5) Repeat steps 3 and 4 until the desired ADF frequency is entered.
6) Press the **ENT** Key to accept the new frequency.
7) Press the **ENT** Key again to transfer the frequency to the active field.
8) Turn the large **FMS** Knob to select the MODE field.
9) Turn the small **FMS** Knob to select ANT, ADF, ADF/BFO, or ANT/BFO.
10) Press the **ENT** Key to complete the selection.

## DME TUNING

1) Press the **ADF/DME** Softkey.
2) Turn the small **FMS** Knob to select the desired Nav radio.
3) Press the **ENT** Key to complete the selection.

## ENTER A TRANSPONDER CODE

1) Press the **XPDR** Softkey (**XPDR/TFC** if the TCAS II option is available).
2) If the aircraft is equipped with two transponders, press the **XPDR1** or **XPDR2** Softkey to select the active transponder. If these softkeys are not present, proceed to step 3.
3) Press the **CODE** Softkey to display the transponder code selection softkeys, for digit entry.
4) Press the digit softkeys to enter the code in the code field. When entering the code, the next key in sequence must be pressed within 10 seconds, or the entry is cancelled and restored to the previous code. Five seconds after the fourth digit has been entered, the transponder code becomes active.

## SELECT TRANSPONDER MODE

### With TCAS II Option

1) Press the **XPDR/TFC** Softkey.
2) Press the **MODE** Softkey to display the transponder mode selection softkeys.
3) Press the desired transponder mode softkey (**STBY**, **ON**, or **ALT**).

### Without TCAS II Option

1) Press the **XPDR** Softkey.
2) If the aircraft is equipped with two transponders, press the **XPDR1** or **XPDR2** Softkey to select the active transponder.
3) Press the desired transponder mode softkey (**STBY**, **ON**, **ALT**, or **GND**).

## SELECTING A COM RADIO

### Transmit/Receive

Press the **COM1 MIC**, **COM2 MIC**, or **COM3 MIC** Key (HF, if installed) on the audio panel.

### Receive Only

Press the **COM1**, **COM2**, or **COM3** Key (HF, if installed) on the audio panel.

## SELECTING A NAV RADIO

1) To begin navigating using a navigation radio, press the **CDI** Softkey on the PFD to select VOR1/LOC1 (NAV1) or VOR2/LOC2 (NAV2).
2) Press the **NAV1, NAV2, DME,** or **ADF** Key on the audio panel to select or deselect the navigation radio audio source. All radio keys can be selected individually or together.

## NAV/COM TUNING

1) Press the small tuning knob to select the desired radio for tuning. A light blue box highlights the radio frequency to be tuned.
2) Turn the respective tuning knobs to enter the desired frequency into the standby frequency field. The large knob enters MHz and the small knob enters kHz.
3) Press the **Frequency Transfer** Key to place the frequency into the active frequency field.

## INTERCOM

Pressing the **INTR COM** Key on either Audio Panel selects and deselects the intercom on both Audio Panels. The annunciator is lit when the intercom is active. The intercom connects the pilot and copilot together. Either the pilot or copilot may select or deselect the intercom.

The **CABIN** Key initiates two way communication between the pilot or copilot and the passengers in the cabin. The annunciator is lit when the cabin intercom is active on either Audio Panel.

When the flight crew wants to communicate with the passengers, the pilot or copilot presses the **CABIN** Key to signal that communication is desired. The cabin signal must be acknowledged to begin intercom conversation.

The **MAN SQ** Key allows either automatic or manual control of the intercom squelch setting. Pressing the **MAN SQ** Key enables manual squelch control, indicated by the MAN SQ annunciator.

- When the MAN SQ Annunciator is extinguished (Automatic Squelch is on), the **ICS** Knob controls only the volume (pressing the **ICS** Knob has no effect on the VOL/SQ selection).
- When the MAN SQ Annunciator is illuminated (Manual Squelch), the **ICS** Knob controls either volume or squelch (selected by pressing the **ICS** Knob and indicated by the VOL or SQ annunciation).

## CONTROLLER PILOT DATA LINK COMMUNICATIONS (OPTIONAL)

The CPDLC (Controller Pilot Data Link Communications) system provides data link communication between the aircraft and an Air Traffic Control facility. Communication is normally in the form of text message elements that resemble phraseology used in voice communications with ATC.

Generally, messages are closed with an acknowledgement or acceptance. When a message is acknowledged, the connection with the ATC facility is not terminated, but kept active for future communication.

Communication hand-off to the next ATC facility is usually performed automatically, but may also be accomplished manually by the pilot.

### Connecting to the CPDLC System

A flight plan must be filed prior to logging on to the CPDLC system. After entering flight plan information in the required fields and successfully logging on to the system, messages may be sent and received.

The following parameters are used to log on to the system:

- Facility
- Flight ID
- Destination Airport
- Filed Departure Airport
- File Departure Time (Optional)

### Performing the system log-on:

1) From the MFD, select the **CPDLC** Softkey.
2) Select the **LOGON** Softkey.
3) Turn the large **FMS** Knob to place the selection cursor over the Facility field.
4) Turn the small **FMS** Knob to select the desired ATC facility to which the CPDLC connection will be established.
5) Press the **ENT** Key to complete the entry.
6) Turn the large **FMS** Knob to place the selection cursor over the Flight ID field.
7) Turn the small **FMS** Knob to enter the Flight ID or aircraft registration number.
8) Press the **ENT** Key to complete the entry.

9) Turn the large **FMS** Knob to place the selection cursor over the Destination Airport field.

10) Enter the identifier of the destination airport used in the filed flight plan and press the **ENT** Key.

11) The Filed Departure Airport field is prefilled with the airport identifier corresponding to the current aircraft location. If the flight plan was filed using a different airport identifier, turn the large **FMS** Knob to place the selection cursor over the Filed Departure Airport field, enter the departure airport, and press the **ENT** Key.

12) (Optional) Turn the large **FMS** Knob to place the selection cursor over the Filed Departure Time field.

13) (Optional) Enter the departure time used in the filed flight plan and press the **ENT** Key.

14) Turn the large **FMS** Knob to place the selection cursor over SEND and press the **ENT** Key. The Status immediately indicates 'Connecting'. After successful log-on, the Status indicates 'Waiting For CPDLC'. Once a CPDLC session is initiated by ATC, the Status indicates 'Connected' and the Current Facility field is populated with the name of the facility. If a transfer to another facility is needed, the Next Facility field is populated. Pressing the **LOGOFF** Softkey terminates the log-on process.

### Creating a Message

Creating a message consists of choosing from a pre-determined list of requests, entering the required information, and sending the request. A CPDLC session must be successfully initiated before a message can be created.

### To create messages:

1) From the MFD, select the **CPDLC** Softkey.

2) Select the **NEW** Softkey. The CPDLC Thread Window appears.

3) With the Response/Request field highlighted, turn the small **FMS** Knob to select the desired request from the list and press the **ENT** Key. For discussion purposes, 'Request [level]' is selected.

4) Highlight the Level field and enter the desired altitude. To toggle between multiple units of measure (FT or FL), highlight the first numeric position and turn the small **FMS** Knob counterclockwise.

5) Press the **ENT** Key to complete the entry.

6) Highlight the Reason field and enter the desired reason from the list.
7) Press the **ENT** Key to complete the entry.
8) Highlight the SEND Button and press the **ENT** Key.

### Responding to an ATC Message

Responding to an ATC message consists of choosing from a pre-determined list of responses or acknowledgements, then sending the response or acknowledgement.

### To respond to a message:

1) From the MFD, select the **CPDLC** Softkey.
2) Turn the large **FMS** Knob to place the selection cursor over the desired message and press the **ENT** Key.
3) Turn the small **FMS** Knob to select the desired Response/Request from the list and press the **ENT** Key.
4) Highlight the SEND Button and press the **ENT** Key.

### Viewing CPDLC Message Dialogs

The status of a string of messages, or dialog, may be checked and past message dialogs viewed. When the system power is cycled, or the end flight parameters are met, the message dialogs are deleted.

### To view messages:

1) From the MFD, select the **CPDLC** Softkey.
2) Turn the large **FMS** Knob to place the selection cursor over the desired message to view and press the **ENT** Key.
3) Press the **ENT** Key to view the CPDLC Thread.

### Deleting Message Dialogs

While the system deletes the list of message dialogs when power is turned off, or the end flight parameters are met, individual message dialogs may also be deleted manually. Message dialogs considered closed may also be deleted.

### To delete a single message dialog:

1) From the MFD, select the **CPDLC** Softkey.
2) Turn the large **FMS** Knob to place the selection cursor over the desired message to delete.

3) Select the **DELETE** Softkey. A confirmation window appears.
4) Highlight OK and press the **ENT** Key.

### To delete all closed message dialogs:

1) From the MFD, select the **CPDLC** Softkey.
2) Select the **DEL ALL** Softkey. A confirmation window appears.
3) Highlight OK and press the **ENT** Key.

### Disconnecting from the CPDLC System

After successfully initiating a CPDLC session, the **LOGOFF** Softkey becomes available.

### To Log-off the CPDLC System:

1) From the MFD, select the **CPDLC** Softkey.
2) Select the **LOGOFF** Softkey.

## PASSENGER ADDRESS (PA) SYSTEM

A passenger address system is provided by pressing the **PA** Key to deliver messages to the passengers only on the available cabin headsets, not the cabin speakers. The message is heard by the other pilot on the headset only if the **PA** Key is enabled on both audio panels. PA messages are one way from the flight deck to the passengers.

## CLEARANCE RECORDER AND PLAYER

***NOTE:*** *Pressing the play key on the pilot's Audio Panel plays recorded audio to the Pilot. Pressing the play key on the Copilot's Audio Panel plays recorded audio to the Copilot.*

Recorded COM audio is stored in separate memory blocks. Once 2.5 minutes of recording time have been reached, the recorder begins recording over the stored memory blocks, starting from the oldest block.

The **PLAY** Key controls the play function. The PLAY annunciator is illuminated to indicate when play is in progress. The PLAY annunciator extinguishes after playback is finished.

Pressing the **PLAY** Key once plays the latest recorded memory block and then returns to normal operation. Pressing the **PLAY** Key again during play of a memory block stops play. If a COM input signal is detected during play of a recorded memory block, play is halted.

Pressing the **PLAY** Key twice within one-half second while audio is playing plays the previous block of recorded audio. Each subsequent two presses of the **PLAY** Key within one-half second backtracks through the recorded memory blocks to reach and play any recorded block.

# AUTOMATIC FLIGHT CONTROL SYSTEM

*NOTE: If sensor information (other than attitude) required for a flight director mode becomes invalid or unavailable, the flight director automatically reverts to the default mode for that axis.*

*NOTE: If the attitude information required for the default flight director modes becomes invalid or unavailable, the autopilot automatically disengages.*

## FLIGHT DIRECTOR ACTIVATION

An initial press of a key listed in the following table (when the flight director is not active) activates the pilot-side flight director in the listed modes.

| Control Pressed | Flight Director Activated | Modes Selected | | | |
|---|---|---|---|---|---|
| | | Lateral | | Vertical | |
| **FD** Key (pilot-side) | Pilot-side | Roll Hold (default) | ROL | Pitch Hold (default) | PIT |
| **FD** Key (copilot-side) | Copilot-side | Roll Hold (default) | ROL | Pitch Hold (default) | PIT |
| **AP** Key | Pilot-side | Roll Hold (default) | ROL | Pitch Hold (default) | PIT |
| **TO/GA** Switch | Pilot-side | Roll Hold (default)<br>Roll Hold (default) | ROL<br>ROL | Takeoff (on ground)<br>Go Around (in air) | TO<br>GA |
| **ALT** Key | Pilot-side | Roll Hold (default) | ROL | Altitude Hold | ALT |
| **VS** Key | Pilot-side | Roll Hold (default) | ROL | Vertical Speed | VS |
| **VNV** Key | Pilot-side | Roll Hold (default) | ROL | Vertical Path Tracking* | VPTH |
| **NAV** Key | Pilot-side | Navigation** | GPS<br>VOR<br>LOC<br>BC | Pitch Hold (default) | PIT |
| **APR** Key | Pilot-side | Approach** | GPS<br>VOR<br>LOC | Pitch Hold (default)<br>Glidepath<br>Glideslope | PIT<br>GP<br>GS |
| **HDG** Key | Pilot-side | Heading Select | HDG | Pitch Hold (default) | PIT |

**Valid VNV flight plan must be entered before **VNV** Key press activates flight director.*

***The selected navigation receiver must have a valid VOR or LOC signal or active GPS course before **NAV** or **APR** Key press activates flight director.*

## VERTICAL MODES

| Vertical Mode | Description | Control | Annunciation |
|---|---|---|---|
| Pitch Hold | Holds the current aircraft pitch attitude; may be used to climb/descend to the Selected Altitude | (default) | PIT |
| Selected Altitude Capture | AFCS armed to capture the altitude displayed in the Selected Altitude window | * | ALTS |
| Altitude Hold | Holds the current Altitude Reference | **ALT** Key | ALT |
| Vertical Speed | Maintains the current aircraft vertical speed; may be used to climb/descend to the Selected Altitude | **VS** Key | VS |
| Flight Level Change | Maintains the current aircraft airspeed (in IAS or Mach) while the aircraft is climbing/descending to the Selected Altitude | **FLC** Key | FLC |
| | | | FLC |
| Vertical Path Tracking | Captures and tracks descent legs of an active vertical profile | **VNV** Key | VPTH |
| VNAV Target Altitude Capture | Captures the Vertical Navigation (VNV) Target Altitude | ** | ALTV |
| Glidepath | Captures and tracks the SBAS glidepath on approach | **APR** Key | GP |
| Glideslope | Captures and tracks the ILS glideslope on approach. When a steep approach is active, speedbrake open, and full flaps, 'STEEP' is annunciated on the right side of the roll scale on the PFD. | | GS |
| Takeoff | Commands a constant pitch angle and wings level on the ground in preparation for takeoff | **TO/GA** Switch | TO |
| Go Around | Disengages the autopilot and commands a constant pitch attitude and wings level | | GA |

* *ALTS armed automatically when PIT, VS, FLC, or GA active, and under VPTH when Selected Altitude is to be captured instead of VNAV Target Altitude*

** *ALTV armed automatically under VPTH when VNAV Target Altitude is to be captured instead of Selected Altitude*

## LATERAL MODES

| Lateral Mode | Description | Control | Annunciation |
|---|---|---|---|
| Roll Hold | Holds the current aircraft roll attitude or rolls the wings level, depending on the commanded bank angle | (default) | ROL |
| Low Bank | Limits the maximum commanded roll angle | **BANK** Key | * |
| Heading Select** | Captures and tracks the Selected Heading | **HDG** Key | HDG |
| Navigation, GPS** | Captures and tracks the selected navigation source (GPS, VOR, LOC) | **NAV** Key | GPS |
| Navigation, VOR Enroute Capture/ Track** | | | VOR |
| Navigation, LOC Capture/Track (No Glideslope) | | | LOC |
| Navigation, Backcourse Arm/Capture/Track | Captures and tracks a localizer signal for backcourse approaches | | BC |
| Approach, GPS | Captures and tracks the selected navigation source (GPS, VOR, LOC) | **APR** Key | GPS |
| Approach, VOR Arm/ Capture/Track | | | VAPP |
| Approach, LOC Capture/Track (Glideslope Mode automatically armed) | | | LOC |

** No annunciation appears in the AFCS Status Box. The acceptable bank angle range is indicated in green along the Roll Scale of the Attitude Indicator.*
*** The Heading, Navigation GPS and Navigation VOR mode maximum roll command limit will be limited to the Low Bank mode value if it is engaged.*

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# GPS NAVIGATION

## DIRECT-TO NAVIGATION

### Direct-to Navigation using the MFD

1) Press the **Direct-to** (D▸) Key on the MFD or MFD Controller.
2) Enter the waypoint identifier.
3) Press the **ENT** Key to confirm the identifier. The 'Activate?' field is highlighted.
4) If no altitude constraint or course is desired, press the **ENT** Key to activate. To enter an altitude constraint, proceed to step 5.
5) Turn the large **FMS** Knob counterclockwise to place the cursor over the 'VNV' altitude field.
6) Enter the desired altitude.
7) Press the **ENT** Key. If the waypoint entered is an airport, the option to select MSL or AGL is now displayed. If the waypoint is not an airport, proceed to step 9.
8) Turn the small **FMS** Knob to select 'MSL' or 'AGL'.
9) Press the **ENT** Key. The cursor is now flashing in the VNV offset distance field.
10) Enter the desired offset distance before (-) the waypoint.
11) Press the **ENT** Key. The 'Activate?' field is highlighted.
12) Press the **ENT** Key to activate.

### Direct-to Navigation using the PFD

1) Press the **Direct-to** Key (D▸) on the PFD.
2) Turn the large **FMS** Knob to place the cursor in the desired selection field.
3) Turn the small **FMS** Knob to begin selecting the desired identifier, location, etc.
4) Press the **ENT** Key.
5) The cursor is now flashing on 'ACTIVATE?'. If no altitude constraint or course is desired, press the **ENT** Key to activate. To enter an altitude constraint, proceed to step 6.
6) Turn the large **FMS** Knob counterclockwise to place the cursor over the 'ALT' altitude field.

7) Turn the small **FMS** Knob to enter the desired altitude constraint.
8) Press the **ENT** Key. If the waypoint entered is an airport, the option to select MSL or AGL is now displayed. If the waypoint is not an airport, proceed to step 10.
9) Turn the small **FMS** Knob to select 'MSL' or 'AGL'.
10) Press the **ENT** Key. The cursor is placed in the 'OFFSET' field.
11) Turn the small **FMS** Knob to enter the desired offset distance (-) from the selected Direct-to.
12) Press the **ENT** Key to highlight 'Activate?' or turn the large **FMS** Knob to highlight the 'CRS' field.
13) Turn the small **FMS** Knob to enter the desired course to the waypoint.
14) Press the **ENT** Key to highlight 'ACTIVATE?'.
15) Press the **ENT** Key again to activate the Direct-to.

## ACTIVATE A STORED FLIGHT PLAN

1) Press the **FPL** Key on the MFD, or MFD Controller, and turn the small **FMS** Knob to display the Flight Plan Catalog Page.
2) Press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight the desired flight plan
4) Select the **ACTIVE** Softkey. The confirmation window is now displayed.
5) With 'OK' highlighted, press the **ENT** Key to activate the flight plan. To cancel the flight plan activation, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

## ACTIVATE A FLIGHT PLAN LEG

1) From the Active Flight Plan Page, press the **FMS** Knob to activate the cursor and turn the large **FMS** Knob to highlight the desired waypoint.
2) Select the **ACT LEG** Softkey.

   OR

   Press the **MENU** Key, select the 'Activate Leg' option from the page menu and press the **ENT** Key. This step must be used when activating a leg from the PFD.
3) With 'Activate' highlighted, press the **ENT** Key.

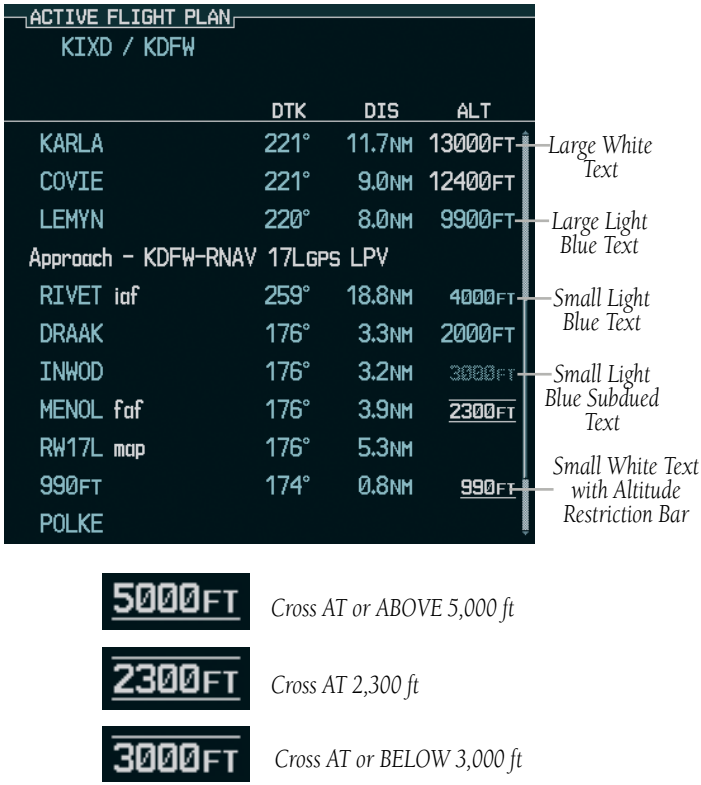
## STOP NAVIGATING A FLIGHT PLAN

1) Press the **FPL** Key to display the Active Flight Plan Page.
2) Press the **MENU** Key to display the Page Menu Window.
3) Turn the large **FMS** Knob to highlight 'Delete Flight Plan' and press the **ENT** Key. With 'OK' highlighted, press the **ENT** Key to deactivate the flight plan. This will not delete the stored flight plan, only the active flight plan.

## VERTICAL NAVIGATION (VNAV)

The navigation database only contains altitudes for procedures that call for "Cross at" altitudes. If the procedure states "Expect to cross at," the altitude is not in the database. In this case the altitude may be entered manually.

***NOTE:*** *Temperature Compensated (TEMP COMP) altitudes are depicted as slanted text.*



Altitudes associated with arrival and approach procedures are "auto-designated". This means the system will automatically use the altitudes loaded with the arrival or approach for giving vertical flight path guidance outside the FAF. Note that these altitudes will be displayed as small light blue text.

Altitudes that are designated for use in vertical navigation may also be made "non-designated" by placing the cursor over the desired altitude and pressing the **CLR** Key. The altitude is now displayed only as a reference. It will not be used to give vertical flight path guidance. Other displayed altitudes may change due to re-calculations or rendered invalid as a result of manually changing an altitude to a non-designated altitude.

***NOTE:*** *Making course changes greater than 90° during a descent with vertical guidance may cause excessive and rapid movement of the vertical deviation indicator, and SVT Pathways.*

The system updates vertical path guidance continuously using ground speed and the calculated distance to the Bottom of Descent (BOD). Due to turn anticipation guidance (turn-smoothing), distance to the BOD can be affected by course changes greater than approximately 5 degrees. Ground speed can be affected by factors such as shifts in wind direction, aircraft power management, pitch angle, and course changes. Abrupt and/or substantial changes to either the distance to the BOD, ground speed, or both can cause similarly abrupt/substantial changes in vertical path guidance.

Because of turn-smoothing, changes to both distance to the BOD and ground speed tend to be more extreme when the BOD is also a waypoint that marks a large course change. These speed and distance changes will be accounted for in the computed required vertical path and reflected in the vertical guidance indications.

| | White Text | Light Blue Text | Light Blue Subdued Text |
|---|---|---|---|
| **Large Text** | Altitude calculated by the system estimating the altitude of the aircraft as it passes over the navigation point. This altitude is provided as a reference and is not designated to be used in determining vertical flight path guidance. | Altitude has been entered by the pilot. Altitude is designated for use in giving vertical flight path guidance. Altitude does not match the published altitude in navigation database or no published altitude exists. | The system cannot use this altitude in determining vertical flight path guidance. |
| **Small Text** | Altitude is not designated to be used in determining vertical flight path guidance. Altitude has been retrieved from the navigation database and is provided as a reference. | Altitude is designated for use in giving vertical flight path guidance. Altitude has been retrieved from the navigation database or has been entered by the pilot and matches a published altitude in the navigation database. | The system cannot use this altitude in determining vertical flight path guidance. |

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# FLIGHT PLANNING

## WEIGHT PLANNING

All procedures apply to the MFD unless otherwise stated.

### Entering Weight Parameters

Turn the large **FMS** Knob to select the 'AUX' page group. Turn the small **FMS** Knob to select the Weight Planning Page.

1) Select the **EMPTY WT** Softkey to place the cursor in the Basic Empty Weight field.
2) Enter the desired aircraft empty weight.
3) Press the **ENT** Key. The cursor is now over the 'PILOT & STORES' field.
4) Enter the desired weight of Pilot & Stores.
5) Press the **ENT** Key.
6) Continue repeating these steps until all desired weights have been entered.

### Entering Fuel Parameters

1) If necessary, press the **FMS** Knob to activate the cursor.
2) Turn the large **FMS** Knob to place the cursor in the 'FUEL ON BOARD' field.
3) Select the **FOB SYNC** Softkey to enter the fuel on board quantity as read from the aircraft fuel quantity sensors.

   **Or:**

   Manually enter the desired fuel quantity.
4) Press the **ENT** Key. The cursor is now in the 'FUEL RESERVES' field.
5) Enter the desired reserve fuel quantity.
6) Press the **FMS** Knob to remove the cursor.

## TRIP PLANNING

1) Turn the large **FMS** Knob to select the 'AUX' page group.
2) Turn the small **FMS** Knob to select the Trip Planning Page.
3) The current 'PAGE MODE' is displayed at the top of the page: 'AUTOMATIC' or 'MANUAL'. To change the page mode, select the **AUTO** or **MANUAL** Softkey.

**4)** For Direct-to planning:

**a)** Select the **WPTS** Softkey and verify that the starting waypoint field indicates 'P.POS' (present position).

**b)** If necessary, press the **MENU** Key and select 'Set WPT to Present Position' to display 'P.POS'.

**c)** Press the **ENT** Key and the flashing cursor moves to the ending waypoint field.

**d)** Enter the identifier of the ending waypoint and press the **ENT** Key to accept the waypoint.

**Or:**

For point-to-point planning:

**a)** Enter the identifier of the starting waypoint.

**b)** Once the waypoint's identifier is entered, press the **ENT** Key to accept the waypoint. The flashing cursor moves to the ending waypoint.

**c)** Again, enter the identifier of the ending waypoint.

**d)** Press the **ENT** Key to accept the waypoint.

**Or:**

For flight plan leg planning:

**a)** Select the **FPL** Softkey (at the bottom of the display).

**b)** Turn the small **FMS** Knob to select the desired flight plan (already stored in memory), by number.

**c)** Turn the large **FMS** Knob to highlight the 'LEG' field.

**d)** Turn the small **FMS** Knob to select the desired leg of the flight plan, or select 'CUM' to apply trip planning calculations to the entire flight plan. Selecting 'FPL 00' displays the active flight plan. If an active flight plan is selected, 'REM' will be an available option to display planning data for the remainder of the flight plan.

***NOTE:*** *The page mode must be set to 'MANUAL' to perform the following steps.*

**5)** Turn the large **FMS** Knob to highlight the departure time (DEP TIME) field.

***NOTE:*** *The departure time on the Trip Planning Page is used for preflight planning. Refer to the Utility Page for the actual flight departure time.*

6) Enter the departure time. Press the **ENT** Key when finished. Departure time may be entered in local or UTC time, depending upon system settings.

7) The flashing cursor moves to the ground speed (GS) field. Enter the ground speed. Press the **ENT** Key when finished. Note that in 'automatic' page mode, ground speed is provided by the system.

8) The flashing cursor moves to the fuel flow field. Enter the fuel flow. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, fuel flow is provided by the system.

9) The flashing cursor moves to the fuel onboard field. Modify the fuel onboard. Press the **ENT** Key when finished. In 'AUTOMATIC' mode, fuel onboard is provided by the entry made on the Weight Planning Page.

10) The flashing cursor moves to the calibrated airspeed (CALIBRATED AS) field. Enter the calibrated airspeed. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, calibrated airspeed is provided by the system.

11) The flashing cursor moves to the altitude (IND ALTITUDE) field. Enter the altitude. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, altitude is provided by the system.

12) The flashing cursor moves to the barometric setting (PRESSURE) field. Enter the desired baro setting. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, the baro setting is provided by the setting entered on the PFD.

13) The flashing cursor moves to the air temperature (TOTAL AIR TEMP) field. Enter the desired air temperature. Press the **ENT** Key when finished. Note that in 'AUTOMATIC' page mode, air temperature is provided by the system outside air temperature.

## CREATE A USER WAYPOINT DEFINED BY LATITUDE & LONGITUDE

1) Turn the large **FMS** Knob on the Control Unit to select the 'WPT' page group.

2) Turn the small **FMS** Knob to select the User WPT Information Page.

3) Select the **NEW** Softkey. A waypoint is created at the current aircraft position.

4) Enter the desired waypoint name.

5) Press the **ENT** Key.

6) The cursor is now in the 'WAYPOINT TYPE' field. If desired, the waypoint can be made temporary (deleted automatically when the system is turned off). If the waypoint is to remain in the system, proceed to step 7.
   a) Turn the large **FMS** Knob one click to the left to highlight 'TEMPORARY'.
   b) Press the **ENT** Key to place a check-mark in the box. Turn the large **FMS** Knob to place the cursor back in the 'WAYPOINT TYPE' field.
7) With the cursor in the 'WAYPOINT TYPE' field, turn the small **FMS** Knob to display a list of waypoint types.
8) Turn the small **FMS** Knob to select LAT/LON (latitude and longitude).
9) Press the **ENT** Key.

## CREATE A USER WAYPOINT DEFINED BY RADIALS FROM OTHER WAYPOINTS

1) Turn the large **FMS** Knob on the Control Unit to select the 'WPT' page group.
2) Turn the small **FMS** Knob to select the User WPT Information Page.
3) Select the **NEW** Softkey. A waypoint is created at the current aircraft position.
4) Enter the desired waypoint name.
5) Press the **ENT** Key.
6) The cursor is now in the 'WAYPOINT TYPE' field. If desired, the waypoint can be made temporary (deleted automatically when the system is turned off). If the waypoint is to remain in the system, proceed to step 7.
   a) Turn the large **FMS** Knob one click to the left to highlight 'TEMPORARY'.
   b) Press the **ENT** Key to place a check-mark in the box. Turn the large **FMS** Knob to place the cursor back in the 'WAYPOINT TYPE' field.
7) With the cursor in the 'WAYPOINT TYPE' field, turn the small **FMS** Knob to display a list of waypoint types.
8) Turn the small **FMS** Knob to select RAD/RAD (radial/radial).
9) Press the **ENT** Key.
10) The cursor moves to the 'REFERENCE WAYPOINTS' field. With the first waypoint name highlighted, use the **FMS** Knobs to enter the desired waypoint name. Waypoints may also be selected as follows:

**a)** When a flight plan is active, turning the small **FMS** Knob to the left will display a list of the flight plan waypoints.

**b)** Turn the large **FMS** Knob to select the desired waypoint.

**c)** Press the **ENT** Key.

**Or:**

**a)** Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

**b)** Turn the small **FMS** Knob to the right to display the 'NRST' airports to the aircraft's current position.

**c)** Turn the large **FMS** Knob to select the desired waypoint.

**d)** Press the **ENT** Key.

**Or:**

**a)** Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

**b)** Turn the small **FMS** Knob to the right to display the 'RECENT' waypoints.

**c)** Turn the large **FMS** Knob to select the desired waypoint.

**d)** Press the **ENT** Key.

**Or:**

**a)** Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

**b)** Turn the small **FMS** Knob to the right to display the 'USER' waypoints.

**c)** Turn the large **FMS** Knob to select the desired waypoint.

**d)** Press the **ENT** Key.

**11)** Press the **ENT** Key. The cursor is displayed in the 'RAD' (radial) field. Enter the desired radial from the reference waypoint.

**12)** Press the **ENT** Key.

**13)** Repeat step 10 to enter the next waypoint name.

**14)** Press the **ENT** Key. The cursor is displayed in the 'RAD' (radial) field for the second waypoint. Enter the desired radial from the reference waypoint.

**15)** Press the **ENT** Key.

**16)** Press the **FMS** Knob to remove the flashing cursor.

## CREATE A USER WAYPOINT DEFINED BY A RADIAL & DISTANCE FROM ANOTHER WAYPOINT

**1)** Turn the large **FMS** Knob on the MFD Control Unit to select the 'WPT' page group.

**2)** Turn the small **FMS** Knob to select the User WPT Information Page.

**3)** Select the **NEW** Softkey. A waypoint is created at the current aircraft position.

**4)** Enter the desired waypoint name.

**5)** Press the **ENT** Key.

**6)** The cursor is now in the 'WAYPOINT TYPE' field. If desired, the waypoint can be made temporary (deleted automatically when the system is turned off). If the waypoint is to remain in the system, proceed to step 7.

- **a)** Turn the large **FMS** Knob one click to the left to highlight 'TEMPORARY'.
- **b)** Press the **ENT** Key to place a check-mark in the box. Turn the large **FMS** Knob to place the cursor back in the 'WAYPOINT TYPE' field.

**7)** With the cursor in the 'WAYPOINT TYPE' field, turn the small **FMS** Knob to display a list of waypoint types.

**8)** Turn the small **FMS** Knob to select RAD/DIS (radial/distance).

**9)** Press the **ENT** Key.

**10)** The cursor moves to the 'REFERENCE WAYPOINTS' field. With the first waypoint name highlighted, use the **FMS** Knobs to enter the desired waypoint name. Waypoints may also be selected as follows:

- **a)** When a flight plan is active, turning the small **FMS** Knob to the left will display a list of the flight plan waypoints.
- **b)** Turn the large **FMS** Knob to select the desired waypoint.
- **c)** Press the **ENT** Key.

**Or:**

- **a)** Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.
- **b)** Turn the small **FMS** Knob to the right to display the 'NRST' airports to the aircraft's current position.

**c)** Turn the large **FMS** Knob to select the desired waypoint.

**d)** Press the **ENT** Key.

**Or:**

**a)** Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

**b)** Turn the small **FMS** Knob to the right to display the 'RECENT' waypoints.

**c)** Turn the large **FMS** Knob to select the desired waypoint.

**d)** Press the **ENT** Key.

**Or:**

**a)** Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

**b)** Turn the small **FMS** Knob to the right to display the 'USER' waypoints.

**c)** Turn the large **FMS** Knob to select the desired waypoint.

**d)** Press the **ENT** Key.

**11)** Press the **ENT** Key. The cursor is displayed in the 'RAD' (radial) field. Enter the desired radial from the reference waypoint.

**12)** Press the **ENT** Key.

**13)** The cursor is now displayed in the 'DIS' (distance) field. Enter the desired distance from the reference waypoint.

**14)** Press the **ENT** Key.

**15)** Press the **FMS** Knob to remove the flashing cursor.

## DELETE A USER WAYPOINT

**1)** Turn the large **FMS** Knob to select the 'WPT' page group.

**2)** Turn the small **FMS** Knob to select the User WPT Information Page.

**3)** Press the **FMS** Knob to activate the cursor.

**4)** Turn the large **FMS** Knob to the place the cursor in the 'USER WAYPOINT LIST' field.

**5)** Turn the small **FMS** Knob to highlight the desired waypoint.

**6)** Select the **DELETE** Softkey.

**7)** The message 'Would you like to delete the user waypoint?' is displayed. With 'YES' highlighted, press the **ENT** Key.

## CREATE A FLIGHT PLAN

*NOTE: When creating a flight plan in the Active Flight Plan Window, the first leg is activated automatically after it is created.*

### Creating an active flight plan:

1) Press the **FPL** Key.
2) Press the **FMS** Knob to activate the cursor (only on MFD).
3) Turn the small **FMS** Knob to display the Waypoint Information Window. (Turning it clockwise displays a blank Waypoint Information Window, turning it counter-clockwise displays the Waypoint Information Window with a waypoint selection submenu allowing selection of active flight plan, nearest, recent, user, or airway waypoints).
4) Enter the identifier, facility, or city name of the departure waypoint or select a waypoint from the submenu of waypoints and press the **ENT** Key. The active flight plan is modified as each waypoint is entered.
5) Repeat step numbers 3 and 4 to enter each additional flight plan waypoint.
6) When all waypoints have been entered, press the **FMS** Knob to remove the cursor.

### Creating a stored flight plan:

1) Press the **FPL** Key.
2) Turn the small **FMS** Knob clockwise to display the Flight Plan Catalog Page.
3) Select the **NEW** Softkey; or press the **MENU** Key, highlight 'Create New Flight Plan', and press the **ENT** Key to display a blank flight plan for the first empty storage location.
4) Turn the small **FMS** Knob to display the Waypoint Information Window. (Turning it clockwise displays a blank Waypoint Information Window, turning it counter-clockwise displays the Waypoint Information Window with a waypoint selection submenu allowing selection of active flight plan, nearest, recent, user, or airway waypoints).
5) Enter the identifier, facility, or city name of the departure waypoint or select a waypoint from the submenu of waypoints and press the **ENT** Key.
6) Repeat step numbers 4 and 5 to enter each additional flight plan waypoint.
7) When all waypoints have been entered, press the **FMS** Knob to return to the Flight Plan Catalog Page. The new flight plan is now in the list.

## IMPORT A FLIGHT PLAN FROM AN SD CARD

1) Insert the SD card containing the flight plan in the top card slot on the MFD.
2) Press the **FPL** Key on the Control Unit to display the Active Flight Plan Page on the MFD.
3) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
4) Press the **FMS** Knob to activate the cursor.
5) Turn either **FMS** Knob to highlight an empty or existing flight plan.
6) Select the **IMPORT** Softkey.

   If an empty flight plan is selected, a list of the available flight plans on the SD card will be displayed.

   **Or:**

   If an existing flight plan is selected, an 'Overwrite existing flight plan? OK or CANCEL' prompt is displayed. Press the **ENT** Key to choose to overwrite the selected flight plan and see a list of the available flight plans on the SD card. If overwriting the existing flight plan is not desired, select 'CANCEL' using the **FMS** Knob, press the **ENT** Key, select another existing or empty flight plan, and again select the **IMPORT** Softkey.
7) Turn the small **FMS** Knob to highlight the desired flight plan for importing.
8) Press the **ENT** Key.

## INSERT A WAYPOINT IN THE ACTIVE FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan.
2) If necessary, press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight the desired flight plan waypoint. The new waypoint is inserted before the highlighted waypoint.
4) Turn the small **FMS** Knob. The Waypoint Information Window is now displayed.
5) Enter the new flight plan waypoint by one of the following:
   a) Enter the user waypoint identifier, facility, or city.
   b) Press the **ENT** Key.

      **Or:**

**a)** Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

**b)** Turn the small **FMS** Knob to the right to display the 'NRST' airport waypoints to the aircraft's current position.

**c)** Turn the large **FMS** Knob to select the desired waypoint.

**d)** Press the **ENT** Key.

**Or:**

**a)** Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

**b)** Turn the small **FMS** Knob to the right to display the 'RECENT' waypoints.

**c)** Turn the large **FMS** Knob to select the desired waypoint.

**d)** Press the **ENT** Key.

**Or:**

**a)** Turn the small **FMS** Knob to the left. Initially, a flight plan waypoint list is displayed.

**b)** Turn the small **FMS** Knob to the right to display the 'USER' waypoints.

**c)** Turn the large **FMS** Knob to select the desired user waypoint.

**d)** Press the **ENT** Key.

**6)** Press the **ENT** Key again to "accept" the waypoint.

## ENTER AN AIRWAY IN A FLIGHT PLAN

**1)** Press the **FPL** Key.

**2)** Press the **FMS** Knob to activate the cursor (not required on the PFD).

**3)** Turn the large **FMS** Knob to highlight the waypoint after the desired airway entry point. If this waypoint is not a valid airway entry point, a valid entry point should be entered at this time.

**4)** Turn the small **FMS** Knob one click clockwise and select the **LD AIRWY** Softkey, or press the **MENU** Key and select "Load Airway". The Select Airway Page is displayed. The **LD AIRWY** Softkey or the "Load Airway" menu item is available only when an acceptable airway entry waypoint has been chosen (the waypoint ahead of the cursor position).

5) Turn the **FMS** Knob to select the desired airway from the list, and press the **ENT** Key. Low altitude airways are shown first in the list, followed by "all" altitude airways, and then high altitude airways.

6) Turn the **FMS** Knob to select the desired airway exit point from the list, and press the **ENT** Key. 'LOAD?' is highlighted.

7) Press the **ENT** Key. The system returns to editing the flight plan with the new airway inserted.

## CREATING A USER-DEFINED HOLD AT AN ACTIVE FLIGHT PLAN WAYPOINT

1) Press the **FPL** Key to display the Active Flight Plan Page (MFD) or the Active Flight Plan Window (PFD).

2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the waypoint for the hold.

3) Press the **MENU** Key, highlight 'Hold At Wpt', and press the **ENT** Key. The HOLD AT window appears with the course field highlighted.

4) Use the **FMS** Knobs to edit the entry course, and press the **ENT** Key.

5) Use the small **FMS** Knob to select 'INBOUND' or 'OUTBOUND' course direction, and press the **ENT** Key.

6) Use the small **FMS** Knob to select 'TIME' or 'DIST' length mode, and press the **ENT** Key.

7) Use the **FMS** Knobs to edit the length, and press the **ENT** Key.

8) Use the small **FMS** Knob to select 'RIGHT' or 'LEFT' turn direction, and press the **ENT** Key.

9) Use the **FMS** Knobs to edit the Expect Further Clearance Time (EFC TIME), and press the **ENT** Key.

10) Press the **ENT** Key while 'LOAD?' is highlighted to add the hold into the flight plan.

## CREATING A USER-DEFINED HOLD AT THE AIRCRAFT PRESENT POSITION

1) Press the **FPL** Key to display the Active Flight Plan Page (MFD) or the Active Flight Plan Window (PFD).

2) Press the **MENU** Key, highlight 'Hold At Present Position', and press the **ENT** Key. The HOLD AT window appears with the Length mode highlighted.

3) Use the small **FMS** Knob to select 'TIME' or 'DIST' length mode, and press the **ENT** Key.

4) Use the **FMS** Knobs to edit the length, and press the **ENT** Key.
5) Use the small **FMS** Knob to select 'RIGHT' or 'LEFT' turn direction, and press the **ENT** Key.
6) Use the **FMS** Knobs to edit the Expect Further Clearance Time (EFC TIME), and press the **ENT** Key.
7) Press the **ENT** Key while 'ACTIVATE?' is highlighted to immediately activate the hold.

## REMOVING A USER-DEFINED HOLD (CREATED AT THE AIRCRAFT P.POS)

1) Press the **FPL** Key to display the Active Flight Plan Page (MFD) or the Active Flight Plan Window (PFD).
2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the PPOS-H waypoint.
3) Press the **CLR** Key. A "Remove Holding Pattern?" confirmation window is displayed.
4) Select 'OK' and press the **ENT** Key. The holding pattern is removed from the active flight plan. Select 'CANCEL' and press the **ENT** Key to cancel the removal of the holding pattern.

## REMOVING A USER-DEFINED HOLD (CREATED AT AN ACTIVE WAYPOINT)

1) Press the **FPL** Key to display the Active Flight Plan Page (MFD) or the Active Flight Plan Window (PFD).
2) Press the **FMS** Knob to activate the cursor (not required on the PFD) and turn the large **FMS** Knob to highlight the HOLD waypoint.
3) Press the **CLR** Key. A 'Remove Holding Pattern?' confirmation window is displayed.
4) Select 'OK' and press the **ENT** Key. The holding pattern is removed from the active flight plan. Select 'CANCEL' and press the **ENT** Key to cancel the removal of the holding pattern.

## INVERT AN ACTIVE FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan.
2) Press the **MENU** Key to display the Page Menu.
3) Turn the large **FMS** Knob to highlight 'Invert Flight Plan'.

4) Press the **ENT** Key. The original flight plan remains intact in its flight plan catalog storage location.
5) With 'OK' highlighted, press the **ENT** Key to invert the flight plan.

## REMOVE A DEPARTURE, ARRIVAL, APPROACH, OR AIRWAY FROM A FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan. Press the **FMS** Knob to activate the cursor.

   **Or, for a stored flight plan:**

   a) Press the MFD **FPL** Key and turn the small **FMS** Knob to select the Flight Plan Catalog Page.
   b) Press the **FMS** Knob to activate the cursor.
   c) Turn the large **FMS** Knob to highlight the desired flight plan.
   d) Select the **EDIT** Softkey.
2) Turn the large **FMS** Knob to highlight the title for the approach, departure, arrival, or airway to be deleted. Titles appear in white directly above the procedure's waypoints.
3) Press the **CLR** Key to display a confirmation window.
4) With 'OK' highlighted, press the **ENT** Key to remove the selected procedure or airway.

## STORE A FLIGHT PLAN

1) After creating a flight plan on either the PFD or MFD, it may be saved by pressing the **MENU** Key.
2) Turn the large **FMS** Knob to highlight 'Store Flight Plan' and press the **ENT** Key.
3) With 'OK' highlighted, press the **ENT** Key to store the flight plan.

## EDIT A STORED FLIGHT PLAN

1) Press the **FPL** Key for the MFD and turn the small **FMS** Knob to display the Flight Plan Catalog Page.
2) Press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight the desired flight plan.
4) Select the **EDIT** Softkey.

5) Turn the large **FMS** Knob to place the cursor in the desired location.
6) Enter the changes, then press the **ENT** Key.
7) Press the **FMS** Knob to return to the Flight Plan Catalog Page.

## DELETE A WAYPOINT FROM THE FLIGHT PLAN

1) Press the **FPL** Key to display the active flight plan. Press the **FMS** Knob to activate the cursor.

   **Or, for a stored flight plan:**

   a) Press the **FPL** Key of the MFD and turn the small **FMS** Knob to select the Flight Plan Catalog Page.
   b) Press the **FMS** Knob to activate the cursor.
   c) Turn the large **FMS** Knob to highlight the desired flight plan.
   d) Select the **EDIT** Softkey.

2) Turn the large **FMS** Knob to highlight the waypoint to be deleted.
3) Press the **CLR** Key to display a 'REMOVE (Wpt Name)?' confirmation window.
4) With 'OK' highlighted, press the **ENT** Key to remove the waypoint. To cancel the delete request, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.
5) Once all changes have been made, press the **FMS** Knob to remove the cursor.

## INVERT AND ACTIVATE A STORED FLIGHT PLAN

1) Press the **FPL** Key on the MFD or MFD Control Unit.
2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
3) Press the **FMS** Knob to activate the cursor.
4) Turn the large **FMS** Knob to highlight the desired flight plan.
5) Select the **INVERT** Softkey. 'Invert and activate stored flight plan?' is displayed.
6) With 'OK' highlighted, press the **ENT** Key. The selected flight plan is now inverted and activated. The original flight plan remains intact in its flight plan catalog storage location.

## COPY A FLIGHT PLAN

1) Press the **FPL** Key on the MFD or MFD Control Unit.
2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
3) Press the **FMS** Knob to activate the cursor.
4) Turn the large **FMS** Knob to highlight the flight plan to be copied.
5) Select the **COPY** Softkey. A 'Copy to flight plan #?' confirmation window is displayed.
6) With 'OK' highlighted, press the **ENT** Key to copy the flight plan. To cancel, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

## DELETE A FLIGHT PLAN

1) Press the **FPL** Key on the MFD or MFD Control Unit.
2) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
3) Press the **FMS** Knob to activate the cursor.
4) Turn the large **FMS** Knob to highlight the flight plan to be deleted.
5) Select the **DELETE** Softkey. A 'Delete flight plan #?' confirmation window is displayed.
6) With 'OK' highlighted, press the **ENT** Key to delete the flight plan. To cancel, turn the large **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key.

## GRAPHICAL FLIGHT PLAN CREATION

1) Press the **FPL** Key to display the Active Flight Plan Page on the MFD.
2) Press the **Joystick** to activate the map pointer. Use the **Joystick** to move the pointer to the desired point on the map to be inserted as a waypoint in the flight plan.
3) The default insertion point is at the end of the flight plan. If the selected waypoint is to be placed anywhere other than the end of the flight plan, press the **FMS** Knob to activate the cursor. Waypoints are inserted *ABOVE* the cursor. Turn the large **FMS** Knob to select the desired insertion point.
4) Select the **LD WPT** Softkey. The selected waypoint is inserted at the selected point. The default user waypoint naming is USR000, USR001, USR002, and so on.
5) To change the user waypoint name, follow the procedure for modifying a user waypoint.

## EXPORT A FLIGHT PLAN TO AN SD CARD

1) Insert the SD card into the top card slot on the MFD.
2) Press the **FPL** Key on the Contol Unit to display the Active Flight Plan Page on the MFD.
3) Turn the small **FMS** Knob to select the Flight Plan Catalog Page.
4) Press the **FMS** Knob to activate the cursor.
5) Turn the large **FMS** Knob to highlight the flight plan to be exported.
6) Select the **EXPORT** Softkey.
7) Press the **ENT** Key to confirm the export.

# PROCEDURES

## LOAD AND ACTIVATE A DEPARTURE PROCEDURE

1) Press the **PROC** Key.
2) Turn the large **FMS** Knob to highlight 'SELECT DEPARTURE'.
3) Press the **ENT** Key. The cursor is displayed in the 'DEPARTURE' field with a list of available departures.
4) Turn the large **FMS** Knob to highlight the desired departure.
5) Press the **ENT** Key. A list of runways may be displayed for the departure. If so, turn either **FMS** Knob to select the desired runway.
6) Press the **ENT** Key. The cursor is displayed in the 'TRANSITION' field with a list of available transitions.
7) Turn the large **FMS** Knob to highlight the desired transition.
8) Press the **ENT** Key.
9) With 'LOAD?' highlighted, press the **ENT** Key. The departure is active when the flight plan is active.

## ACTIVATE A DEPARTURE LEG

1) Press the **FPL** Key on the MFD or MFD Control Unit to display the active flight plan.
2) Press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight the TO waypoint of the desired leg within the departure.
4) Select the **ACT LEG** Softkey. A confirmation window showing the selected leg is displayed.
5) With 'ACTIVATE' highlighted, press the **ENT** Key.

## LOAD AN ARRIVAL PROCEDURE

1) Press the **PROC** Key.
2) Turn the large **FMS** Knob to highlight 'SELECT ARRIVAL'.
3) Press the **ENT** Key. The cursor is displayed in the 'ARRIVAL' field with a list of available arrivals.

4) Turn the large **FMS** Knob to highlight the desired arrival.
5) Press the **ENT** Key. A list of transitions is displayed for the selected arrival.
6) Turn either **FMS** Knob to select the desired transition.
7) Press the **ENT** Key. A list of runways may be displayed for the selected arrival.
8) Turn the large **FMS** Knob to highlight the desired runway.
9) Press the **ENT** Key.
10) With 'LOAD?' highlighted, press the **ENT** Key.
11) The arrival becomes part of the active flight plan.

## ACTIVATE AN ARRIVAL LEG

1) Press the **FPL** Key to display the active flight plan.
2) Press the **FMS** Knob to activate the cursor.
3) Turn the large **FMS** Knob to highlight the TO waypoint of the desired leg within the arrival.
4) Select the **ACT LEG** Softkey. A confirmation window showing the selected leg is displayed.
5) With 'ACTIVATE' highlighted, press the **ENT** Key.

## LOAD AND/OR ACTIVATE AN APPROACH PROCEDURE

***NOTE:*** *If certain GPS parameters (SBAS, RAIM, etc.) are not available, some published approach procedures for the desired airport may not be displayed in the list of available approaches.*

1) Press the **PROC** Key.
2) Turn the large **FMS** Knob to highlight 'SELECT APPROACH'.
3) Press the **ENT** Key. A list of available approaches for the destination airport is displayed.
4) Turn either **FMS** Knob to highlight the desired approach.
5) Press the **ENT** Key. A list of available transitions for the selected approach procedure is now displayed.

6) Turn either **FMS** Knob to select the desired transition. The "Vectors" option assumes vectors will be received to the final course segment of the approach and will provide navigation guidance relative to the final approach course.

7) Press the **ENT** Key. The cursor moves to the MINIMUMS field.

8) If desired, the DA/MDA for the selected approach procedure may be entered and displayed on the PFD. Turn the small **FMS** Knob in the direction of the green arrow to change the display from OFF to BARO, optional RAD ALT, or TEMP COMP.

9) Press the **ENT** Key. The cursor moves to the altitude field. Turn the small **FMS** Knob to enter the published DA/MDA for the selected approach procedure.

10) Press the **ENT** Key. If BARO, RAD ALT, or OFF was selected step 8, proceed to step 11. If TEMP COMP was selected in step 8, the cursor moves to the 'TEMP AT...." field. Turn the small **FMS** Knob to enter the temperature at the destination airport. The temperature compensated altitude minimum is displayed below the previously enter minimum altitude value.

11) Press the **ENT** Key. 'LOAD? or ACTIVATE?' is now displayed with 'LOAD?' highlighted.

12) Turn the large **FMS** Knob to select either 'LOAD?' or 'ACTIVATE?'.

Selecting 'LOAD?' enters the selected approach procedure into the active flight plan, but is not currently active. Selecting 'ACTIVATE?' enters the selected approach procedure into the active flight plan and activates the first leg of the approach.

13) Press the **ENT** Key.

## ACTIVATE AN APPROACH IN THE ACTIVE FLIGHT PLAN

1) Press the **PROC** Key.

2) Turn the large **FMS** Knob to highlight 'ACTIVATE APPROACH'.

3) Press the **ENT** Key.

## ACTIVATE A VECTOR TO FINAL APPROACH FIX

1) Press the **PROC** Key.
2) Turn the large **FMS** Knob to highlight 'ACTIVATE VECTOR-TO-FINAL'.
3) Press the **ENT** Key.
4) The final approach course becomes the active leg.

## ACTIVATE A MISSED APPROACH IN THE ACTIVE FLIGHT PLAN

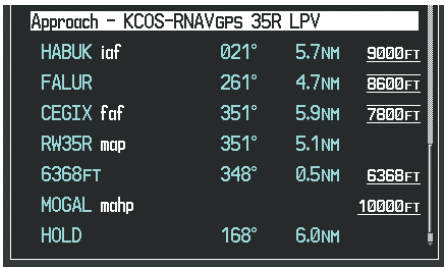
1) Press the **PROC** Key.
2) Turn the large **FMS** Knob to highlight 'ACTIVATE MISSED APPROACH'.
3) Press the **ENT** Key. A confirmation window is displayed.
4) With 'ACTIVATE' highlighted, press the **ENT** Key.

   **Or:**

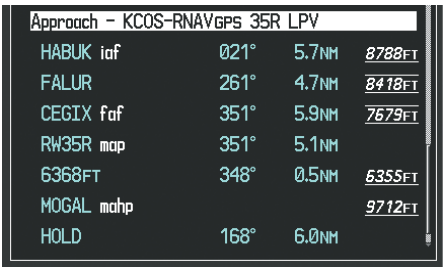
   Press the TO/GA switch.

## TEMPERATURE COMPENSATED ALTITUDE

When temperature compensated altitude is enabled for the loaded approach, the altitudes associated with the approach waypoints are displayed in slanted text.


Approach - KCOS-RNAVGPS 35R LPV
HABUK iaf 021° 5.7NM 9000FT
FALUR 261° 4.7NM 8600FT
CEGIX faf 351° 5.9NM 7800FT
RW35R map 351° 5.1NM
6368FT 348° 0.5NM 6368FT
MOGAL mahp 10000FT
HOLD 168° 6.0NM

*Altitudes Displayed Without Temperature Compensation*


Approach - KCOS-RNAVGPS 35R LPV
HABUK iaf 021° 5.7NM 8788FT
FALUR 261° 4.7NM 8418FT
CEGIX faf 351° 5.9NM 7679FT
RW35R map 351° 5.1NM
6368FT 348° 0.5NM 6355FT
MOGAL mahp 9712FT
HOLD 168° 6.0NM

*Altitudes Displayed With Temperature Compensation*

### Enabling temperature compensated altitude:

1) From the Active Flight Plan Page, press the **MENU** Key. The Page Menu is displayed.
2) Turn the **FMS** Knob to highlight 'Temperature Compensation'.
3) Press the **ENT** Key. The TEMPERATURE COMPENSATION Window is displayed.
4) Use the small **FMS** Knob to select the temperature at the <airport>. The compensated altitude is computed as the temperature is selected.
5) Press the **ENT** Key. 'ACTIVATE COMPENSATION?' is highlighted.
6) Press the **ENT** Key. The compensated altitudes for the approach are shown in the flight plan.

### Disabling temperature compensated altitude:

1) From the Active Flight Plan Page, press the **MENU** Key. The Page Menu is displayed.
2) Turn the **FMS** Knob to highlight 'Temperature Compensation'.
3) Press the **ENT** Key. The TEMPERATURE COMPENSATION Window is displayed.
4) Press the **ENT** Key. 'CANCEL COMPENSATION?' is highlighted.
5) Press the **ENT** Key. The temperature compensated altitude at the FAF is cancelled.

Blank Page

# HAZARD AVOIDANCE

## CUSTOMIZING THE HAZARD DISPLAYS ON THE NAVIGATION MAP

1) With the Navigation Map Page displayed, press the **MENU** Key to display the Navigation Map Page Menu. The cursor flashes on the 'Map Setup' option.
2) Press the **ENT** Key. The Map Setup Menu is displayed. Turn the small **FMS** Knob to select 'Weather' to customize the display of weather features. Select 'Traffic' to customize the display of traffic.
3) Press the small **FMS** Knob to return to the Navigation Map Page.

## SIRIUSXM WEATHER (SUBSCRIPTION OPTIONAL)

***WARNING:*** *Do not use data link weather information for maneuvering in, near, or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.*

### Displaying SiriusXM Weather on the Navigation Map Page

1) Select the **MAP** Softkey.
2) Select the **NEXRAD** or **XM LTNG** Softkey to display the desired weather. Select the applicable softkey again to remove weather data from the Navigation Map Page.

### Display METAR and TAF information on the Airport Information Page

1) Turn the large **FMS** Knob to select the WPT Page Group.
2) Turn the small **FMS** Knob to select the Airport Information Page.
3) Select the **WX** Softkey to display METAR and TAF text (METAR and TAF information is updated every 12 minutes).

### Displaying Weather on the XM Weather Data Link Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the XM Weather Data Link Page.
3) Select the available softkeys to select the desired SiriusXM Weather product.
4) Select the **LEGEND** Softkey to view the legends for the selected products. If necessary, turn either **FMS** Knob to scroll through the list. Press the small **FMS** Knob or the **ENT** Key to return to the map.

## Map Panning Information – XM Weather Data Link Page

1) Push in the **Joystick** to display the panning arrow.
2) Move the **Joystick** to place the panning arrow on AIRMETs, TFRs, METARs, SIGMETs, PIREPs or AIREPs.
3) Press the **ENT** Key to display pertinent information for the selected product.

   Note that pressing the **ENT** Key when panning over an AIRMET or a SIGMET displays an information box that shows the text of the report. Panning over an airport with METAR information does not display more information but allows the user to press the **ENT** Key and select that Airport's Information Page to display the text of the report. Pressing the **ENT** Key when panning over a TFR displays TFR specific information.

## Weather Products and Symbols

| Wx Product Status Icons | Description |
|---|---|
| | **NEXRAD** - Available for the US and Canada. The age of the displayed data for each is shown at the right. |
| | **ECHO TOP** - The age of the displayed data is shown at the right. Not displayed when CLOUD TOP is displayed. |
| | **CLOUD TOP** - The age of the displayed data is shown at the right. Not displayed when ECHO TOP is displayed. |
| | **XM LIGHTNING** - The age of the displayed data is shown at the right. |
| | **CELL MOVEMENT** - The age of the displayed data is shown at the right. |
| | **SIGMET & AIRMET** - The age of the displayed data for each is shown at the right. |
| | **METAR** - Available for the US and Canada. The age of the displayed data for each is shown at the right. |
| | **SURFACE ANALYSIS with CITY FORECAST** - The upper symbol depicts Surface Analysis. The lower symbol depicts City Forecast. The age of the displayed data for each is shown at the right. The selected forecast period is shown at the bottom. |

| Wx Product Status Icons | Description |
|---|---|
| | **FREEZING LEVEL** - The age of the displayed data is shown at the right. |
| | **WINDS ALOFT** - Available for the US and Canada. The age of the displayed data for each is shown at the right. The altitude selection is shown at the bottom. |
| | **COUNTY WARNING** - The age of the displayed data is shown at the right. |
| | **CYCLONE WARNING** - The age of the displayed data is shown at the right. |
| | **AIREP** - The age of the displayed data is shown at the right. |
| | **PIREP** - The age of the displayed data is shown at the right. Urgent Pireps are displayed in yellow. |
| | **TURBULENCE** - The age of the displayed data is shown at the right. The altitude selection is shown at the bottom. |
| | **ICING POTENTIAL** - The age of the displayed data is shown at the right. The altitude selection is shown at the bottom. |

## CONNEXT WEATHER (OPTIONAL)

***WARNING:*** *Do not use data link weather information for maneuvering in, near or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.*

***WARNING:*** *Do not use the indicated data link weather product age to determine the age of the weather information shown by the data link weather product. Due to time delays inherent in gathering and processing weather data for data link transmission, the weather information shown by the data link weather product may be significantly older than the indicated weather product age.*

Weather data is provided when the pilot initiates either a manual or automatic Connext data request on the Connext Weather Data Link Page on the MFD. No weather data is displayed until the first Connext Weather Data Request is made.

## Registering with Garmin Connext

A subscriber account must be established prior to receiving Connext Weather products. Contact Garmin Connext at https://fly.garmin.com/fly-garmin/support/applications/satelliteservices/ or by calling 1-866-739-5687 in the United States or (011) 913-440-1135. The following information is required to register for Connext Weather services: Prodigy System ID, GSR56 (GSR1) Serial Number, Tail Number, Serail/Airframe Number, Country of Registration, Aircraft Manufacturer, and Aircraft Model.

1) Turn the large **FMS** Knob on the MFD to select the AUX page group.
2) Turn the small **FMS** Knob to select the AUX-SYSTEM STATUS. Note the System ID and GSR1 Serial Number in the AIRFRAME field.

## Activating Connext Weather Registration

After a subscriber account has been established, the system must be activated for data link features such as reporting services or Connext Weather. Activation is accomplished by entering the required access code. This process is only performed when initially setting up the system for Connext services.

1) Ensure the aircraft is outside and has a clear view of the sky (if registering via an Iridium satellite telephone connection), or connected to a Wi-Fi network. Refer to the Additional Features section for more information on connecting to a Wi-Fi network.
2) Turn the large **FMS** Knob on the MFD to select the MAP page group.
3) Turn the small **FMS** Knob to select the MAP - WEATHER DATA LINK (CNXT or XM) Page. If 'XM' is displayed in the page title, it will be necessary to change the data link source to Garmin Connext (CNXT) before continuing. Refer to 'Viewing the Weather Data Link Page' procedure to change the data link source to Garmin Connext Weather prior to registration.
4) If the system displays the 'Connext Registration' window, proceed to step 7. Otherwise, press the **MENU** Key.
5) Turn the large **FMS** Knob to highlight 'Register With Connext' in the menu list.
6) Press the **ENT** Key. The Connext Registration window is displayed.
7) Enter the access code provided by customer service in the ACCESS CODE field.
8) Press the **ENT** Key. 'REGISTER' is highlighted.

**9)** Press the **ENT** Key. The system contacts the Garmin Connext service using the GDL 59 Wi-Fi connection (if available) or through the Iridium satellite network using the GSR 56. Registration is complete when the STATUS field displays 'REGISTERED'.

### Accessing Connext Weather Products

**1)** Turn the large **FMS** Knob to select the Map Page Group.

**2)** Turn the small **FMS** Knob to select the Connext Weather Data Link Page.

When a weather product is selected for display on the Connext Weather Data Link Page, a box containing a symbol for the product and its age (in minutes) are shown in the upper right. If weather data has not been requested, 'N/A' is shown next to the product symbol instead of age. The age of the weather product is based on the time difference between when the data was assembled on the ground and the current GPS time. Weather products are updated continuously or refreshed at specific intervals (defined in the **Refresh Rate** column in the following table).

If for any reason, a weather product is not refreshed within the defined **Expiration Time** intervals, the data is considered expired and is removed from the display. The age of the expired product is replaced by dashes. If more than half of the expiration time has elapsed, the color of the product age readout changes to yellow.

The refresh rate represents the interval at which the Connext servers make available the most current known weather data. It does not necessarily represent the rate at which new content is received from weather sources.

| Weather Product | Symbol | Expiration Time (Minutes) | Refresh Rate (Minutes) |
|---|---|---|---|
| Radar Precipitation (PRECIP) | | 30 | U.S./Canada: 3* Europe: 15 |
| Infrared Satellite (IR SAT) | | 60 | 30 |
| Data Link Lightning (DL LTNG) | | 30 | Continuous |
| SIGMETs/AIRMETs (SIG/AIR) | | 60 | Continuous |
| Meteorological Aerodrome Report (METARs) | | 90 | Continuous |

| Weather Product | Symbol | Expiration Time (Minutes) | Refresh Rate (Minutes) |
|---|---|---|---|
| Winds Aloft (WIND) | | 60 | Continuous |
| Pilot Weather Report (PIREPs) | | 90 | Continuous |
| Temporary Flight Restrictions (TFRs) | no product image | 60 | Continuous |
| Terminal Aerodrome Reports (TAFs) | no product image | 60 | Continuous |

** The composite precipitation image is updated every 3 minutes, but individual radar sites may take between 3 and 10 minutes to provide new data.*

## Setting Up and Customizing the Connext Weather Data Link Page

1) Select the Connext Weather Data Link Page.
2) Press the **MENU** Key.
3) With 'Weather Setup' highlighted, press the **ENT** Key.
4) Turn the small **FMS** Knob to select 'Product Group 1' or 'Product Group 2', and press the **ENT** Key.
5) Turn the large **FMS** Knob or press the **ENT** Key to scroll through product selections.
6) Turn the small **FMS** Knob to scroll through options for each product (ON/OFF, range settings, etc.).
7) Press the **ENT** Key to select an option.
8) Press the **FMS** Knob or **CLR** Key to return to the Connext Weather Data Link Page with the changed settings.

## Restoring Default Connext Weather Data Link Page Settings

1) Select the Connext Weather Data Link Page.
2) Press the **MENU** Key.
3) With 'Weather Setup' highlighted, press the **ENT** Key.

4) Press the **MENU** Key.
5) Highlight the desired default(s) to restore (all or for selection) and press **ENT** Key.

### Switching Between Connext, and SiriusXM Weather Sources

1) Turn the large **FMS** Knob on the MFD to select the MAP page group.
2) Turn the small **FMS** Knob to select the desired Weather Data Link Page.
3) Press the **MENU** Key.
4) Turn the large **FMS** Knob to select 'Display Connext Weather', or 'Display XM Weather' (choice dependent on current weather source) and press the **ENT** Key.

### Viewing Legends for Displayed Connext Weather Products

1) Select the Connext Weather Data Link Page.
2) Select the **LEGEND** Softkey to display the legends for the displayed weather products.

   **Or**:

   **a)** Press the **MENU** Key.

   **b)** Select 'Weather Legend' and press the **ENT** Key.
3) Turn the **FMS** Knob to scroll through the legends if more are available than fit in the window.
4) To remove the Legend Window, select the **LEGEND** Softkey, the **ENT** or the **CLR** Key, or press the **FMS** Knob.

### Setting Up and Customizing Weather Data for the Navigation Map Page

1) Select the Navigation Map Page.
2) Press the **MENU** Key.
3) With 'Map Setup' highlighted, press the **ENT** Key.
4) Turn the small **FMS** Knob to select the 'Weather' Group and press the **ENT** Key.
5) Turn the large **FMS** Knob or press the **ENT** Key to scroll through product selections.

6) Turn the small **FMS** Knob to scroll through options for each product (ON/OFF, range settings).

7) Press the **ENT** Key to select an option.

8) Press the **FMS** Knob or **CLR** Key to return to the Navigation Map Page with the changed settings.

## Connext Weather Data Requests

The Connext Data Request window provides the flight crew with the options to define the requested weather coverage area(s), choose automatic weather update intervals (if desired), and the ability to send or cancel weather data requests. The window also displays the status of the Connext data request process.

### *Requesting Connext Weather Data Manually*

1) Select the Connext Weather Data Link Page.

2) Press the **MENU** Key.

3) With 'Connext Weather Request' highlighted, press the **ENT** Key.

4) Turn the large **FMS** Knob to highlight the desired coverage option(s) and press the **ENT** Key to check or uncheck one of more of the following coverage selections:

- PRESENT POSITION – Requests data based on current location.
- DESTINATION – Requests data based on active flight plan destination (if the flight plan contains no destination, dashes '------" are displayed.)
- FPL – Requests data based on active flight plan. Turn the small **FMS** Knob to select the desired flight plan look-ahead distance option (or choose 'REMAINING FPL' to request the remainder of the flight plan).
- WAYPOINT – Requests data based on any valid waypoint.

5) Turn the large **FMS** Knob highlight to the 'DIAMETER / RTE WIDTH' distance field and turn the small **FMS** Knob to select the desired diameter and route width of the request, then press the **ENT** Key.

6) Turn the large **FMS** Knob until the 'SEND REQ' button is highlighted. Press the **ENT** Key to initiate the request immediately or press the **FMS** Knob to return to the Connext Data Link Page without requesting data.

During a Connext Data Request, the Request Status box initially displays "Contacting Connext...". Once a connection is established, the Request Status Box displays "Receiving Wx Data... Time Remaining:" with an estimated data transfer time

(either minutes or seconds). If desired, the Connext Data Request window may be closed while the data request is processing by pressing the **FMS** Knob; the data request will continue to process in the background. Connext Data Requests typically take between 1 to 4 minutes to complete depending on the size of the selected weather coverage area and Iridium signal strength.

The system retrieves all available Connext Weather products within the selected coverage area during an initial Connext Data Request, regardless of which products (if any) are currently enabled for display. On subsequent requests, previously retrieved textual data (such as METARs and TAFs) is retained if it has not expired, while new textual weather data matching the current coverage area and all graphical weather data is downloaded during every data request.

If the system cannot complete a Connext weather data request, one or more messages will appear in the request status window as shown in the following table.

| Weather Request Status Message | Description |
|---|---|
| Auto requests inhibited<br>Send manual request to reset. | The system has disabled automatic weather data requests due to excessive errors. Automatic weather data requests have stopped. Send a manual weather data request to resume automatic updates. |
| Auto update retry: ## Seconds | The system will attempt another automatic weather data request after an error occurred during the previous request. Timer counts down until the next automatic request occurs. |
| Connext Comm Error [2] | A communications error has occurred with the GIA. The system should be serviced. |
| Connext Comm Error [4] | This occurs if multiple automatic weather data requests have recently failed, or the GDL 59 or a GIA is off-line. |
| Connext Comm Error [5] | The Iridium or Connext networks are not accessible. Check Iridium signal strength. If this error persists, the system should be serviced. |
| Connext Comm Error [6] | A communications error has occurred. It this error persists, the system should be serviced. |
| Connext Comm Error [7] | A weather data transfer has timed out. Check Iridium signal strength and re-send the data request. |
| Connext Comm Error [8] | A server error has occurred or invalid data received. |

| Weather Request Status Message | Description |
|---|---|
| Connext Login Invalid | There is a problem with the Connext registration. Contact Garmin Connext at 1-866-739-5687 in the United States or (011) 913-440-1135 for assistance. |
| Connext Server Temporarily Inop | The Connext weather data server is temporarily out of service, but is expected to return to service in less than 30 minutes. |
| Connext Server Inop | The Connext weather data server will be out of service for at least 30 minutes. |
| Invalid Coverage Area | The weather data request coverage area does not contain at least one of the following: a waypoint, a flight plan, or a flight plan destination. Verify at least one of the coverage options is enabled (checked) and contains required criteria, then re-send the data request. |
| No Connext Subscription | The system is not be currently subscribed to Connext, or the access code is incorrect. Verify the access code. Contact Garmin Connext at 1-866-739-5687 in the United States or (011) 913-440-1135 for assistance. |
| Reduce Request Area | The Connext weather data request area exceeds size limits. Reduce weather coverage area and re-send data request. |
| Request Cancelled | The user has cancelled a Connext weather data request. |
| Requested area too large. Reduce coverage area. | The size of the Connext weather data request has exceeded limits. Reduce the size of the coverage area and try the weather data request again. |
| Request Failed - Try Again | The weather data request timed-out. Re-send data request. |
| Transfer Preempted | The data link is busy. Retry request later. |

### *Cancelling a Connext Weather Data Request in Progress*

1) Select the Connext Weather Data Link Page.
2) Press the **MENU** Key.
3) With 'Connext Data Request' highlighted, press the **ENT** Key.
4) Turn the large **FMS** Knob to select 'CANCEL REQ' and press the **ENT** Key. The request status box indicates 'Request Cancelled'.
5) Press the **FMS** Knob to return to the Connext Weather Data Link Page.

### *Enabling Automatic Connext Data Requests*

1) Select the Connext Weather Data Link Page.
2) Press the **MENU** Key.
3) With 'Connext Weather Request' highlighted, press the **ENT** Key.
4) Choose the desired weather coverage options.
5) Turn the large **FMS** Knob to select the 'UPDATE RATE' setting. Then turn the small **FMS** Knob to highlight the desired automatic update frequency (OFF, 5 Min, 10 Min, 15 Min, 20 Min, 25 Min, 30 Min, 45 Min, or 60 Min), then press the **ENT** Key.
6) The 'SEND REQ" button is highlighted and a countdown timer is displayed in the 'REQUEST STATUS' based on the currently selected update rate. Press the **ENT** Key to immediately send an immediate Connext Data Request.

   **Or**:

   Press the **FMS** Knob to return to the Connext Weather Data Link Page.

## Connext Weather Products

### *Precipitation*

Precipitation data is not real-time. The lapsed time between collection, processing, and dissemination of radar images can be significant and may not reflect the current radar synopsis. Due to the inherent delays and the relative age of the data, it should be used for long-range planning purposes only.

***NOTE:** Precipitation data cannot be displayed on the Navigation Map Page at the same time as terrain.*

## Displaying Precipitation Weather Information

1) Select the **MAP** Softkey (for the PFD Inset Map, select the **INSET** Softkey). This step is not necessary on the Connext Weather Data Link Page.
2) Select the **PRECIP** Softkey.

Radar data shown represents lowest level, base reflectivity, of radar returns. The display of the information is color-coded to indicate the weather severity level. All weather product legends can be viewed on the Connext Weather Data Link Page. For the Precipitation legend, select the **LEGEND** Softkey when Precipitation is selected for display.

## Precipitation Limitations

Radar images may have certain limitations:

- Radar base reflectivity does not provide sufficient information to determine cloud layers or precipitation characteristics (wet hail vs. rain). For example, it is not possible to distinguish between wet snow, wet hail, and rain.
- Radar base reflectivity is sampled at the minimum antenna elevation angle. An individual radar site cannot depict high altitude storms at close ranges. It has no information about storms directly over the site.
- When zoomed in to a range of 30 nm, each square block on the display represents an area of four square kilometers.

The following may cause abnormalities in displayed radar images:

- Ground clutter
- Strobes and spurious radar data
- Sun strobes (when the radar antenna points directly at the sun)
- Interference from buildings or mountains, which may cause shadows
- Metallic dust from military aircraft, which can cause alterations in radar scans

### *Infrared Satellite*

Infrared Satellite (IR SAT) data depicts cloud top temperatures from satellite imagery. Brighter cloud top colors indicate cooler temperatures occurring at higher altitudes.

## Displaying Cloud Tops information

1) Select the Connext Weather Data Link Page.
2) Select the **IR SAT** Softkey.

To display the Infrared Satellite legend, select the **LEGEND** Softkey when Infrared Satellite data is selected for display.

### *Data Link Lightning*

Lightning data shows the approximate location of cloud-to-ground lightning strikes. A strike icon represents a strike that has occurred within a two-kilometer region. Neither cloud-to-cloud nor the exact location of the lightning strike is displayed.

### Displaying Data Link Lightning information

1) Select the **MAP** Softkey (for the PFD Inset Map, select the **INSET** Softkey). This step is not necessary on the Connext Weather Data Link Page.
2) Select the **DL LTNG** Softkey.

To display the Data Link Lightning legend on the Connext Weather Data Link Page, select the **LEGEND** Softkey when Data Link Lightning is selected for display.

## *SIGMETs and AIRMETs*

The entire SIGMET or AIRMET is displayed as long as any portion of it is occurring within the coverage area of the Connext data request.

### Displaying SIGMETs and AIRMETs

1) Select the Connext Weather Data Link Page.
2) Select the **SIG/AIR** Softkey.
3) To view the text of the SIGMET or AIRMET, press the **RANGE** Knob and move the Map Pointer over the icon.
4) Press the **ENT** key.

To display the SIGMET and AIRMET legend, select the **LEGEND** Softkey when SIGMETs and AIRMETs are selected for display.

## *METARs and TAFs*

***NOTE:*** *METAR information is only displayed within the installed navigation database service area.*

METAR and TAF text are displayed on the WPT-Weather Information Page. TAF information is displayed in its raw form when it is available.

### Displaying METAR and TAF text

1) On the Connext Weather Data Link Page, select the **METAR** Softkey.
2) Press the **RANGE** Knob and pan to the desired airport.
3) Press the **ENT** Key. The Weather Information Page is shown with METAR and TAF text.
4) Use the **FMS** Knob or the **ENT** Key to scroll through the METAR and TAF text. METAR text must be completely scrolled through before scrolling through the TAF text.

5) Press the **FMS** Knob or the **CLR** Key to return to the Connext Weather Data Link Page.

**Or**:

1) Select the Weather Information Page.
   a) Turn the large **FMS** Knob to select the Waypoint Page Group.
   b) Select the **WX** Softkey to select the Weather Information Page.
2) Press the **FMS** Knob to display the cursor.
3) Use the **FMS** Knob to enter the desired airport and press the **ENT** Key.
4) Use the **FMS** Knob or the **ENT** Key to scroll through the METAR and TAF text. Note that the METAR text must be completely scrolled through before scrolling through the TAF text.

To display the METAR legend on the Connext Weather Data Link Page, select the **LEGEND** Softkey when METARs are selected for display.

### *Winds Aloft*

Winds Aloft data shows the forecasted wind speed and direction at the surface and at selected altitudes. Altitude can be displayed in 3,000-foot increments up to 42,000 feet MSL.

### Displaying Winds Aloft data on the Navigation Map

1) Select the Connext Weather Data Link Page.
2) Select the **MORE WX** Softkey.
3) Select the **WIND** Softkey.
4) Select the desired altitude level: SFC (surface) up to 42,000 feet. Select the **NEXT** or **PREV** Softkey to cycle through the altitude softkeys. The **WIND** Softkey label changes to reflect the altitude selected.

To display the Winds Aloft legend, select the **LEGEND** Softkey when Winds Aloft is selected for display.

### Enabling/disabling winds aloft display in Profile View

1) Select the Navigation Map Page.
2) Press the **MENU** Key.
3) With Map Setup highlighted, press the **ENT** Key.
4) Turn the small **FMS** Knob to select the Profile Group and press the **ENT** Key.

5) Turn the large **FMS** Knob to select 'Profile Winds'.
6) Turn the small **FMS** Knob to select 'On' or 'Off'.
7) Press the **FMS** Knob or **CLR** Key to return to the Navigation Map Page with the changed settings.

### *PIREPs*

Pilot Weather Reports (PIREPs) describe in-flight weather encountered by pilots. A PIREP may contain unforecast adverse weather conditions, such as low in-flight visibility, icing conditions, wind shear, turbulence, and type of aircraft flown. PIREPs are issued as either Routine (UA) or Urgent (UUA).

### Displaying PIREP text

1) Select the Connext Weather Data Link Page.
2) Select the **MORE WX** Softkey.
3) Select the **PIREPS** Softkey.
4) Press the **RANGE** Knob and pan to the desired weather report. A gray circle will appear around the weather report when it is selected.
5) Press the **ENT** Key. The PIREP text is first displayed in a decoded fashion, then as raw text.
6) Use the **FMS** Knob or the **ENT** Key to scroll through the PIREP text.
7) Press the **FMS** Knob or the **CLR** Key to close the PIREP text window and return to the Connext Weather Data Link Page.

To display the PIREP or AIREP legend, select the **LEGEND** Softkey when PIREPs or AIREPs are selected for display.

The PIREP color is determined by the type (routine or urgent).

## TRAFFIC INFORMATION SERVICE (TIS)

***NOTE:*** *If the system is configured to use the optional TCAS II, TIS is not available for use.*

***NOTE:*** *Traffic Information Service (TIS) is only available when the aircraft is within the service volume of a TIS capable terminal radar site.*

| Traffic Symbol | Description |
|---|---|
| | Non-Threat Traffic<br>(intruder is beyond 5 nm and greater than 1200' vertical separation) |
| | Traffic Advisory (TA)<br>(closing rate, distance, and vertical separation meet TA criteria) |
| | Traffic Advisory Off Scale |

**Traffic Symbol Description**

### Displaying Traffic on the Traffic Map Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the Traffic Map Page.
3) Select the **OPERATE** Softkey to begin displaying traffic. 'OPERATING' is displayed in the Traffic Mode field.
4) Select the **STANDBY** Softkey to place the system in the Standby Mode. 'STANDBY' will be displayed in the Traffic Mode field.
5) Rotate the **Joystick** clockwise to display a larger area or rotate counter-clockwise to display a smaller area.
6) Select the **TNA MUTE** Softkey to mute the "TIS Not Available" aural alert.

### Displaying Traffic on the Navigation Map

1) Ensure TIS is operating. With the Navigation Map displayed, select the **MAP** Softkey.
2) Select the **TRAFFIC** Softkey. Traffic will now be displayed on the map.

## TRAFFIC COLLISION AVOIDANCE SYSTEM (TCAS II) (OPTIONAL)

***NOTE:*** *If the system is configured to use TIS, the optional TCAS II is not available for use.*

***WARNING:*** *The TCAS II system is intended for advisory use only. TCAS II is intended to help the pilot locate transponder-equipped traffic visually and to provide advisory vertical maneuver guidance to avoid traffic. It is the responsibility of the pilot to see and maneuver to avoid traffic, terrain, and obstacles.*

| Traffic Symbol | Description |
|---|---|
| | Non-Threat Traffic<br>(intruder is beyond 5 nm and greater than 1200' vertical separation) |
| | Proximity Advisory (PA)<br>(intruder is within 5 nm and less than 1200' vertical separation) |
| | Traffic Advisory (TA)<br>(Potential collision area is within 20 to 48 seconds) |
| | Traffic Advisory Off Scale |
| | Resolution Advisory (RA)<br>(Potential collision area is within 15 to 35 seconds) |
| | Resolution Advisory Off Scale |

**Traffic Symbol Description**

### System Test

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the Traffic Map Page.
3) Select the **TEST** Softkey. The aural annunciation "TCAS Test" will be heard. A test pattern of traffic symbols is displayed on the Traffic Page and inset map on the PFD. The VSI will display a red no descent indication and a green climb indication of 2000 feet per min. and red from 2000 to 4000+. The pitch display will also display the appropriate indications

appropriate with the VSI. The self test takes approximately eight seconds to complete, after which a voice alert "TCAS Test Passed" is heard. In the event the system test fails, a voice alert "TCAS Test Failed" is heard and a visual annunciation 'TCAS FAIL' appears on the PFD. In addition, a visual annunciation 'FAIL' appears in the Operating Mode box on the Traffic Map Page.

## Displaying Traffic on the Traffic Map Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the Traffic Map Page.
3) Select the **TA ONLY** or **TA/RA** Softkey to begin displaying traffic. 'TA/RA' or 'TA ONLY' respectively, is displayed in the TCAS Mode field.
4) Select the **STANDBY** Softkey to place the system in the Standby Mode. 'TFC STBY' will be displayed in the TCAS Mode field.
5) Select the **ABS** (absolute) or **REL** (relative) Softkey to display intruder altitude as an absolute altitude or an altitude relative to own aircraft altitude.
6) Rotate the **Joystick** clockwise to display a larger area or rotate counter-clockwise to display a smaller area.

### Changing the Altitude Range

1) On the Traffic Page, select the **ALT RNG** Softkey.
2) Select one of the following Softkeys:

   **ABOVE:** Displays non-threat and proximity traffic from 9900 feet above the aircraft to 2700 feet below the aircraft. Typically used during climb phase of flight.

   **NORMAL:** Displays non-threat and proximity traffic from 2700 feet above the aircraft to 2700 feet below the aircraft. Typically used during enroute phase of flight.

   **BELOW:** Displays non-threat and proximity traffic from 2700 feet above the aircraft to 9900 feet below the aircraft. Typically used during descent phase of flight.

   **UNREST** (unrestricted)**:** All traffic is displayed.
3) To return to the Traffic Page, select the **BACK** Softkey.

### Displaying Traffic on the Navigation Map

1) Ensure TCAS II system is operating. With the Navigation Map displayed, select the **MAP** Softkey.
2) Select the **TRAFFIC** Softkey. Traffic will now be displayed on the map.

## TERRAIN AWARENESS & WARNING SYSTEM

***WARNING:*** *The TAWS display shows supplemental information only. It should not be used for navigation.*

***NOTE:*** *Terrain data is not displayed when the aircraft latitude is greater than 75 degrees north or 60 degrees south.*

***NOTE:*** *TAWS operation is only available when the system is configured for a TAWS-A or TAW-B installation.*

### Manual System Test

1) While the TAWS-A or TAWS-B Page is displayed, press the **MENU** Key.
2) Turn the small **FMS** Knob to select 'Test TAWS System'.
3) Press the **ENT** Key. During the test 'TAWS TEST' is displayed in the center of the TAWS-A Page.

   When all is in working order, "TAWS System Test, OK" is heard.

### Displaying the TAWS-A or TAW-B Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the TAWS-A or TAWS-B Page.
3) If desired, select the **VIEW** Softkey to access the **ARC** and **360** softkeys. When the **ARC** Softkey is selected, a radar-like 120° view is displayed. Select the **360** Softkey to return to the 360° default display.
4) Rotate the **Joystick** clockwise to increase the display range or rotate counter-clockwise to decrease the display range.

| Color | Terrain/Obstacle Location |
|---|---|
| Red | Terrain/Obstacle above or within 100' below current aircraft altitude. |
| Yellow | Terrain/Obstacle between 100' and 1000' below current aircraft altitude. |
| Black | Terrain/Obstacle is more than 1000' below aircraft altitude. |

### Enable/Disable Aviation Data

1) While the TAWS-A or TAWS-B Page is displayed, press the **MENU** Key.
2) Turn the small **FMS** Knob to select "Show (or Hide) Aviation Data".
3) Press the **ENT** Key.

### Inhibiting/Enabling FLTA and PDA Alerting (TAWS-A Only)

1) Select the TAWS-A Page.
2) Press the **TAWS INH** Softkey to inhibit or enable TAWS-A (choice dependent on current state).

### Overriding Flaps-based FIT Alerting (TAWS-A Only)

1) Select the TAWS-A Page.
2) Press the **FLAP OVR** Softkey.

### Inhibiting/Enabling GPWS Alerting (TAWS-A Only)

1) Select the TAWS-A Page.
2) Press the **GPWS INH** Softkey to inhibit or enable GPWS alerts (choice dependent on current state).

### Inhibiting/Enabling GSD Alerting (TAWS-A Only)

***NOTE:*** *Only available during a GSD alert.*

On the PFD, press the **GS INH** or **GP INH** Softkey (only displayed during a GSD alert) to inhibit or enable GSD alerts (softkey choice dependent on present GSD alert type).

### TAWS Inhibit (TAWS-B Only)

*NOTE: If TAWS alerts are inhibited when the Final Approach Fix is the active waypoint in a GPS SBAS approach, a LOW ALT annunciation may appear on the PFD next to the altimeter if the current aircraft altitude is at least 164 feet below the prescribed altitude at the Final Approach Fix.*

#### *Disable TAWS*

While the TAWS-B Page is displayed, select the **INHIBIT** Softkey.

**Or:**

1) Press the **MENU** Key.
2) Turn the small **FMS** Knob to select 'Inhibit TAWS'.
3) Press the **ENT** Key.

#### *Enable TAWS*

While the TAWS-B Page is displayed, select the **INHIBIT** Softkey.

**Or**:

1) While the TAWS-B Page is displayed, press the **MENU** Key.
2) Turn the small **FMS** Knob to select 'Enable TAWS'.
3) Press the **ENT** Key.

### Displaying Terrain and Obstacles on the Navigation Map

1) With the Navigation Map displayed, press the **MAP** Softkey.
2) Select the **TERRAIN** Softkey. Terrain and obstacles will now be displayed on the map.

## PROFILE VIEW TERRAIN AND OBSTACLES (OPTIONAL)

The system offers a Profile View of terrain and obstacles relative to the aircraft's current flight path and altitude on the Navigation Map Page of the MFD. Profile View does not provide terrain or obstacle caution or warning annunciations or voice alerts, nor does it display potential impact points inside the Profile View.

### Enabling/Disabling Profile View

While viewing the Navigation Map Page, select the **PROFILE** Softkey.

### Enabling/Disabling Terrain on the Profile View

1) Select the Navigation Map Page.
2) Select the **MAP** Softkey.
3) Select the **TERRAIN** Softkey.

### Customizing the Profile Path display on the Navigation Map Page

1) Select the Navigation Map Page.
2) Press the **MENU** Key.
3) With 'Map Setup' highlighted, press the **ENT** Key.
4) Turn the small **FMS** Knob to select the 'Profile' Group and press the **ENT** Key.
5) Turn the large **FMS** Knob or press the **ENT** Key to scroll through product selections.
   - PROFILE PATH – Turns the display of the Profile Path on or off and sets maximum map range at which the Profile Path is shown
6) Turn the small **FMS** Knob to scroll through options (ON/OFF, range settings).
7) Press the **ENT** Key to select an option.
8) Press the **FMS** Knob or **CLR** Key to return to the Navigation Map Page with the changed settings.

## AIRBORNE COLOR WEATHER RADAR

***WARNING:*** *Begin transmitting only when it is safe to do so. If it is desired to transmit while the aircraft is on the ground, no personnel or objects should be within 11 feet of the antenna.*

***CAUTION:*** *In Standby Mode, the antenna is parked at the center line. It is always a good idea to put the radar in Standby Mode before taxiing the aircraft to prevent the antenna from bouncing on the bottom stop and possibly causing damage to the radar assembly.*

### Displaying Weather on the Weather Radar Page

1) Turn the large **FMS** Knob to select the Map Page Group.
2) Turn the small **FMS** Knob to select the Weather Radar Page.
3) Select the **MODE** Softkey.

4) If the aircraft is on the ground, select the **STANDBY** Softkey to initiate the one minute warm-up period. After the warm-up is complete, the radar will enter the Standby Mode. After the aircraft is airborne, select the **WEATHER** Softkey.

   **Or**:

   If the aircraft is already airborne, select the **WEATHER** or **GROUND** Softkey. The one-minute warm-up period will be initiated, after which the radar will begin transmitting. The horizontal scan is initially displayed.

5) Turn the **Joystick** to select the desired range.

6) If desired, select the **VERTICAL** Softkey for vertical scanning.

### Enabling/Disabling Weather Radar on the Navigation Map Page

Only tilt and bearing can be changed from the Navigation Map radar overlay. Other functions are only accessible from the Weather Radar Page.

1) Select the Navigation Map Page.
2) Select the **MAP** Softkey.
3) Select the **WX RADAR** Softkey.

   **Or**:

1) On the Navigation Map Page, press the **MENU** Key.
2) With 'Map Setup' highlighted, press the **ENT** Key.
3) Turn the small **FMS** Knob to select the 'Weather' group, then press the **ENT** Key.
4) Turn the large **FMS** Knob to scroll through the product selections and highlight the WX RADAR overlay selection ('On' or 'Off'). Turn the small **FMS** knob to highlight the desired selection.
5) To remove the menu, press the **FMS** Knob or **CLR** Key.

### Adjusting Antenna Tilt

Move the **Joystick** up or down to adjust the tilt of the antenna up or down. Monitor the displayed tilt value in the TILT field.

When scanning vertically, a Tilt Line may be displayed to aid in positioning the tilt of the antenna. If the Tilt Line is not displayed, perform the following steps:

1) Press the **MENU** Key
2) Turn the large **FMS** Knob to select 'Show Tilt Line'.
3) Press the **ENT** Key.

## Adjusting Antenna Bearing

Move the **Joystick** right or left to adjust the azimuth position of the antenna right or left. Monitor the displayed bearing value in the BEARING field.

When scanning horizontally, a Bearing Line may be displayed to aid in positioning the antenna for the vertical scan. If the Bearing Line is not displayed, perform the following steps:

1) Press the **MENU** Key
2) Turn the large **FMS** Knob to select 'Show Bearing Line'.
3) Press the **ENT** Key.

### *Vertically Scan a Storm Cell*

1) While in the Horizontal Scan view, move the **Joystick** to place the Bearing Line on the desired storm cell, or other area, to be vertically scanned.
2) Select the **VERTICAL** Softkey. A vertical "slice" of the selected area will now be displayed.
3) Move the **Joystick** right or left to move the scanned "slice" a few degrees right or left.
4) Turn the **Joystick** to adjust the range.
5) To select a new area to be vertically scanned, select the **HORIZON** Softkey to return to the Horizontal Scan view and repeat the previous steps.

## Adjusting Gain

***WARNING:*** *Changing the gain in Weather Mode will cause precipitation intensity to be displayed as a color not representative of the true intensity. Remember to return the gain setting to 'Calibrated' for viewing the actual intensity of precipitation.*

1) Select the **GAIN** Softkey to activate the cursor in the 'GAIN' field.
2) Turn the small **FMS** Knob to adjust the gain for the desirable level. The gain setting is visible in the gain field as a movable horizontal bar in a flashing box. The line pointer is a reference depicting the calibrated position.
3) Press the **FMS** Knob to remove the cursor.
4) Select the **GAIN** Softkey again to recalibrate the gain. 'CALIBRATED' will be displayed in the 'GAIN' field.

### Ground Mapping

1) Select the **MODE** Softkey.
2) Select the **GROUND** Softkey to place the radar in Ground Map Mode.
3) Select the **BACK** Softkey.

### Sector Scan

1) While in the Horizontal Scan Mode, move the **Joystick** right or left to place the Bearing Line in the desired position. The location of the Bearing Line will become the center point of the Sector Scan.
2) Press the **FMS** Knob to display the cursor.
3) Turn the large **FMS** Knob to place the cursor in the SECTOR SCAN field.
4) Turn the small **FMS** Knob to select FULL, 60˚, 40˚, or 20˚ scan.
5) If desired, readjust the Bearing Line with the **Joystick** to change the center of the Sector Scan.
6) Press the **FMS** Knob to remove the cursor.

### Antenna Stabilization

1) To activate or deactivate the antenna stabilization, select the **MODE** Softkey.
2) Select the **STAB ON** Softkey to activate antenna stabilization or select the **STAB OFF** Softkey to deactivate. The current stabilization condition is shown in the upper right of the weather radar display.

### Weather Attenuated Color Highlight (WATCH®)

To activate or deactivate the WATCH® feature, select the **WATCH** Softkey. This feature is only available in the Horizontal Scan Mode.

### Weather Alert

To activate or deactivate Weather Alert, select the **WX ALRT** Softkey. Activating and deactivating will also enable or inhibit the alert on the PFD.

### Automatic Standby

When the weather radar system is in the Weather or Ground Map Mode, upon landing the system will automatically switch to Standby Mode.

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# ADDITIONAL FEATURES

## SYNTHETIC VISION (OPTIONAL)

***WARNING:*** *Use appropriate primary systems for navigation, and for terrain, obstacle, and traffic avoidance. SVT is intended as an aid to situational awareness only and may not provide either the accuracy or reliability upon which to solely base decisions and/or plan maneuvers to avoid terrain, obstacles, or traffic.*

Synthetic Vision Technology (SVT) functionality is offered as an optional enhancement to the Prodigy® Flight Deck 300.

SVT is primarily comprised of a computer-generated forward-looking, attitude aligned view of the topography immediately in front of the aircraft from the pilot's perspective. SVT information is shown on the primary flight display (PFD).

SVT offers a three-dimensional view of terrain and obstacles. Terrain and obstacles that pose a threat to the aircraft in flight are shaded yellow or red.

In addition to SVT enhancement to the PFD, the following feature enhancements have been added to the PFD:

- Pathways
- Flight Path Marker
- Horizon Heading Marks
- Terrain and Obstacle Alerting
- Three-dimensional Traffic
- Airport Signs
- Runway Display

### Displaying Synthetic Terrain

1) Press the **PFD** Softkey.
2) Press the **SYN VIS** Softkey.
3) Press the **SYN TERR** Softkey.
4) Press the **BACK** Softkey to return to the previous page.

## Displaying Pathways

***NOTE:*** *When the optional TCAS II system issues a Resolution Advisory (RA) Pathways are automatically removed from the display. Pathways may again be displayed by the pilot manually selecting Pathways.*

***NOTE:*** *Pathways are not available when the cross-pointer (X-Pointer) flight director format is selected.*

1) Press the **PFD** Softkey.
2) Press the **SYN VIS** Softkey.
3) If not already enabled, press the **SYN TERR** Softkey.
4) Press the **PATHWAY** Softkey.
5) Press the **BACK** Softkey to return to the previous page.

## Displaying Heading on the Horizon

1) Press the **PFD** Softkey.
2) Press the **SYN VIS** Softkey.
3) If not already enabled, press the **SYN TERR** Softkey.
4) Press the **HRZN HDG** Softkey.
5) Press the **BACK** Softkey to return to the previous page.

## Displaying Airport Signs

1) Press the **PFD** Softkey.
2) Press the **SYN VIS** Softkey.
3) If not already enabled, press the **SYN TERR** Softkey.
4) Press the **APTSIGNS** Softkey.
5) Press the **BACK** Softkey to return to the previous page.

## TERMINAL PROCEDURE CHARTS

*NOTE: With the availability of SafeTaxi®, ChartView, or FliteCharts®, it may be necessary to carry another source of charts on-board the aircraft.*

### SafeTaxi®

SafeTaxi® is an enhanced feature that gives greater map detail as the map range is adjusted in on the airport. The airport display on the map reveals runways with numbers, taxiways identifiers, and airport landmarks including ramps, buildings, control towers, and other prominent features. Resolution is greater at lower map ranges. The aircraft symbol provides situational awareness while taxiing.

Selecting the **DCLTR** Softkey (declutter) once removes the taxiway markings and airport identification labels. Selecting the **DCLTR** Softkey twice removes VOR station ID, the VOR symbol, and intersection names if within the airport plan view. Selecting the **DCLTR** Softkey a third time removes the airport runway layout, unless the airport in view is part of an active route structure. Selecting the **DCLTR** Softkey again cycles back to the original map detail.

The SafeTaxi database contains detailed airport diagrams for selected airports. These diagrams provide the pilot with situational awareness by displaying the aircraft position in relation to taxiways, ramps, runways, terminals, and services. This information should not be used by the pilot as the basis for maneuvering the aircraft on the ground. This database is updated on a 56-day cycle.

### ChartView (Optional)

ChartView resembles the paper version of Jeppesen terminal procedures charts. The charts are displayed in full color with high-resolution. The MFD depiction shows the aircraft position on the moving map in the plan view of most approach charts and on airport diagrams.

The ChartView database is updated on a 14-day cycle. If the ChartView database is not updated within 70 days of the expiration date, ChartView will no longer function.

### FliteCharts® (Optional)

FliteCharts® resemble the paper version of AeroNav Services terminal procedures charts. The charts are displayed with high-resolution and in color for applicable charts. The MFD depiction shows the aircraft position on the moving map in the plan view of most approach charts and on airport diagrams.

The FliteCharts database contains procedure charts for the United States only. This database is updated on a 28-day cycle. If not updated within 180 days of the expiration date, FliteCharts will no longer function.

### View Charts from the Navigation Map Page

1) Select the **SHW CHRT** Softkey when displayed.

   **Or**:

   Move the map pointer to point to a desired point on the map and select the **SHW CHRT** Softkey.
2) Select the **DP, STAR, APR, WX,** and **NOTAM** softkeys to access charts for departures, arrivals, approaches, weather and NOTAMs. Note that NOTAMS are only available with ChartView.
3) Select the **GO BACK** Softkey to return to the previous page.

### View Charts from the Active Flight Plan Page

1) While viewing the Active Flight Plan Page, press the **FMS** Knob to activate the cursor.
2) Turn the large **FMS** Knob to select the departure airport, destination airport, departure, arrival, or approach.
3) Select the **SHW CHRT** Softkey. The appropriate chart will be displayed, if available for the item selected.
4) Select the **GO BACK** Softkey to return to the previous page.

### Change Day/Night View

1) While viewing a chart press the **MENU** Key to display the Page Menu OPTIONS.
2) Turn the large **FMS** Knob to highlight the 'Chart Setup' Menu Option and press the **ENT** Key.
3) Turn the large **FMS** Knob to move between the 'FULL SCREEN' and 'COLOR SCHEME' Options.
4) Turn the small **FMS** Knob to choose between the 'On' and 'Off' Full Screen Options.
5) Turn the small **FMS** Knob to choose between 'Day', 'Auto', and 'Night' Options.

6) In Auto Mode, turn the large **FMS** Knob to select the percentage field and change percentage with the small **FMS** Knob. The percentage of change is the day/night crossover point based on backlighting intensity.

7) Press the **FMS** Knob when finished to remove the Chart Setup Menu.

## AIRPORT DIRECTORY

The AOPA or AC-U-KWIK Airport Directory adds enhanced airport information when viewing airports on the WPT-Airport Information Page.

The Airport Directory databases are revised every 56 days. Check fly.garmin.com for the current database.

### View Airport Directory Information

While viewing the WPT-Airport Information Page, if necessary, select the **INFO-1** Softkey to change the softkey label to display **INFO-2**. Airport Directory information is displayed on the right half of the display.

## SATELLITE TELEPHONE AND SMS MESSAGING

Operation of these features in the cockpit is accomplished through the AUX-TELEPHONE, AUX-TEXT MESSAGING, AUX-REPORT STATUS, and AUX-WI-FI SETUP Pages. For operation using the cabin handset, consult the instructions provided with the handset.

### Registering With Garmin Connext

A subscriber account must be established prior to using the Iridium Satellite System. Before setting up an Iridium account, obtain the serial number of the Iridium Transceiver and the System ID by viewing the AUX- SYSTEM STATUS Page. Contact Garmin Connext at 1-866-739-5687 in the United States or 913-397-8200, ext. 1135.

### Telephone Communication

The pilot or copilot can place and answer calls on the Iridium satellite network as well as to or from the telephone handset in the cabin. Calls can also be answered or made from the cabin phone, however, only actions initiated from the cockpit phone will be discussed here. See the cabin handset user guide for more information. Control and monitoring of telephone functions are accomplished through the AUX-TELEPHONE Page.

### *Viewing the Telephone Page*

**1)** Turn the large **FMS** Knob on the MFD to select the AUX page group.

**2)** Turn the small **FMS** Knob to select SATELLITE PHONE.

**3)** If necessary, select the **TEL** Softkey to display the AUX-TELEPHONE Page.

| Internal Phone | External Phone | Description |
|---|---|---|
| | | Phone is Idle |
| | | Phone is ringing |
| | | Phone has a dial tone (off hook) or connected to another phone |
| | | Phone dialed is busy |
| | | Phone is dialing another phone |
| | | Phone has failed |
| | | Phone status not known |
| | | Phone is disabled |
| | | Phone is reserved for data transmission |
| | | Calling other phone or incoming call from other phone |

| Internal Phone | External Phone | Description |
|---|---|---|
| | | Other phone is on hold |
| | | Phones are connected |

### *Enable the Iridium Telephone System*

1) With the AUX-TELEPHONE Page displayed, select the **MENU** Key on the MFD to display the Page Menu.
2) Turn either **FMS** Knob to place the cursor on 'Enable Iridium Transmission'.
3) Press the **ENT** Key.

### *Disable the Iridium Telephone System*

1) With the AUX-TELEPHONE Page displayed, select the **MENU** Key on the MFD to display the Page Menu.
2) Turn either **FMS** Knob to place the cursor on 'Disable Iridium Transmission'.
3) Press the **ENT** Key.

## Incoming Calls

When viewing MFD pages other than the AUX-TELEPHONE Page, a pop-up alert will be displayed. If the call is from the cabin, CABIN will be displayed. If the incoming call is an Iridium network call, IRIDIUM will be displayed. The pop-up alert may be inhibited at times, such as during takeoff. In addition to the pop-up alert, a ringing phone symbol will be displayed to the right of the MFD page title. Also, the voice alert "Incoming Call" will be heard on the selected cockpit audio.

### *Answer an Incoming Call in the Cockpit*

1) Press the **TEL** Key on the appropriate audio panel.
2) Select the **ANSWER** Softkey on the MFD.

   **Or**:

While viewing the AUX-TELEPHONE Page:

1) Press the **TEL** Key on the appropriate audio panel.
2) Press the **MENU** Key to display the Page Menu.
3) Turn either **FMS** Knob to place the cursor on 'Answer Incoming Call'.
4) Press the **ENT** Key.

Selecting the **IGNORE** Softkey will extinguish the pop-up window and leave the current call unanswered. Selecting the **IGNRE ALL** Softkey will extinguish the pop-up window for the current and all future incoming calls and leave the current call unanswered. Selecting the **TEL** Softkey will display the AUX-TELEPHONE Page allowing additional call information to be viewed before answering.

### *Disabling Incoming Call Alerts*

1) With the AUX-TELEPHONE Page displayed, press the **MENU** Key on the MFD to display the Page Menu.
2) Turn either **FMS** Knob to place the cursor on 'Disable Incoming Call Alerts'.
3) Press the **ENT** Key. The voice and pop-up alert will not be displayed now when an incoming call is received.

## Outgoing Calls

Voice calls can be made from the cockpit to the handset in the cabin, or to an external phone through the Iridium Satellite Network.

### *Make a Call to the Cabin:*

1) Press the **TEL** Key on the appropriate audio panel.
2) Select the **DIAL** Softkey on the MFD.
3) Press the **ENT** Key. The cursor will move from 'CABIN' to 'OK'.
4) Press the **ENT** Key again. The cabin phone will now ring.

To exit the call, select the **HANGUP** Softkey.

### *Make an External Call from the Cockpit*

1) Press the **TEL** Key on the appropriate audio panel.
2) Select the **DIAL** Softkey on the MFD.
3) Turn the small **FMS** Knob to select 'IRIDIUM'.
4) Press the **ENT** Key. The cursor has now moved to the phone number entry field.

**5)** Enter the desired telephone number by selecting the number softkeys on the MFD or by pressing the numeric keys on the MFD Control Unit. The International dialing sequence is necessary to place a call from the cockpit to an external phone: Country Code + City/Area Code (if any) + Telephone Number.

The following country codes may be used when calling other satellite telephone systems.

| Satellite System | Country Code |
|---|---|
| Inmarsat | 870 |
| ICO | 8810 or 8811 |
| Ellipso | 8812 or 8813 |
| Iridium | 8816 or 8817 |
| Globalstar | 8818 or 8819 |

**6)** Press the **ENT** Key. 'OK' is highlighted.

**7)** Press the **ENT** Key. The system will begin calling the number.

When numeric entries are required while a call is connected, such as selecting menu items like "dial zero to get an operator", select the **KEYPAD** Softkey to access the numeric softkeys. To exit the call, select the **HANGUP** Softkey.

### Placing The Cockpit Phone on Hold

Select the **HOLD** Softkey on the MFD.

**Or**:

**1)** Press the **MENU** Key to display the Page Menu.

**2)** Turn either **FMS** Knob to place the cursor on 'Put Current Call On Hold'.

**3)** Press the **ENT** Key.

Select the **HOLD** Softkey again to resume the call.

### Transferring a Call from the Cockpit

From the cockpit phone, an external call can be transferred to the cabin phone, or a call with the cabin phone can be transferred to an external phone, or (when two Iridium Transceivers are installed) an external call can be transferred to another external phone.

**To transfer a call:**

1) Select the **TRANS** Softkey on the MFD.

   **Or**:

   **a)** Press the **MENU** Key to display the Page Menu.

   **b)** Turn either **FMS** Knob to place the cursor on 'Transfer Current Call'.

   **c)** Press the **ENT** Key.

2) Press the **ENT** Key. The cursor now highlights the phone number entry field.
3) Enter the phone number as discussed earlier for making an external call on the Iridium satellite network.
4) Press the **ENT** Key. 'OK' is now highlighted.
5) Press the **ENT** Key again to place the call.

### Making a Conference Call from the Cockpit

1) Select the **CONF** Softkey on the MFD.

   **Or**:

   **a)** Press the **MENU** Key to display the Page Menu.

   **b)** Turn either **FMS** Knob to place the cursor on 'Conference Current Call'.

   **c)** Press the **ENT** Key.

2) Press the **ENT** Key. The cursor now highlights the phone number entry field.
3) Enter the phone number as discussed earlier for making an external call on the Iridium satellite network.
4) Press the **ENT** Key. 'OK' is now highlighted.
5) Press the **ENT** Key again to place the call.

### Text Messaging (SMS)

Messages may be sent to an email address or text message capable cellular telephone. Message length is limited to 160 characters, including the email address.

The text messaging user interface is mainly through the AUX-TEXT MESSAGING Page.

### *Viewing the Text Messaging Page*

1) Turn the large **FMS** Knob on the MFD to select the AUX page group.
2) Turn the small **FMS** Knob to select SATELLITE PHONE.
3) If necessary, select the **SMS** Softkey to display the AUX-TEXT MESSAGING Page.

| Message Symbol | Description |
|---|---|
| | Received text message that has not been opened |
| | Received text message that has been opened |
| | Saved text message, draft not sent |
| | System is sending text message |
| | Text message has been sent |
| | System failed to send text message |
| | Predefined text message |

### Viewing a Text Message When Received

When viewing MFD pages other than the AUX-TEXT MESSAGING Page, a pop-up alert will be displayed when a new text message is received.

Select the **VIEW** Softkey to view the message. Selecting the **IGNORE** Softkey will extinguish the pop-up window and leave the text message unopened. Selecting the **IGNR ALL** Softkey will extinguish the pop-window and ignore all future incoming text messages. Selecting the **SMS** Softkey will display the AUX-TEXT MESSAGING Page.

The pop-up alerts may be enabled or disabled through the Page Menu.

### *Enable/Disable Incoming Text Message Pop-Up Alerts*

1) With the AUX-TEXT MESSAGING Page displayed, press the **MENU** Key on the MFD to display the Page Menu.
2) Turn either **FMS** Knob to place the cursor on 'Disable New Message Popups' or 'Enable New Message Popups'.
3) Press the **ENT** Key. The pop-up alert will not be displayed when an incoming text message is received.

## Reply to a Text Message

While viewing the text message, select the **REPLY** Softkey.

**Or**:

**a)** Press the **MENU** Key to display the Page Menu.

**b)** Turn either **FMS** Knob to place the cursor on 'Reply To Message'.

**c)** Press the **ENT** Key.

## Sending a Text Message

1) While viewing the AUX-TEXT MESSAGING Page, select the **NEW** Softkey.

   **Or**:

   **a)** Press the **MENU** Key to display the Page Menu.

   **b)** Turn either **FMS** Knob to place the cursor on 'Draft New Message'.

   **c)** Press the **ENT** Key.

2) The TEXT MESSAGE DRAFT Window is now displayed with the cursor in the 'TO' field. Enter the desired telephone number or email address. Entry can be accomplished through the alphanumeric keys on the MFD Controller, or combination of the **FMS** Knob on the controller and softkeys on the MFD. The **FMS** Knob is used to enter letters and numbers, or numbers can be entered from the MFD by selecting the **NUMBERS** Softkey. Select the **CAP LOCK** Softkey to create upper and lower case alpha characters. Special characters can be accessed by selecting the **SYMBOLS** Softkey.
3) Press the **ENT** Key. The cursor is now displayed in the 'MESSAGE' field.
4) Enter the desired message using any combination of entry methods as described in step 2.
5) Press the **ENT** Key.

6) Select the **SEND** Softkey to send the message immediately, or select the **SAVE** Softkey to save the message in Outbox for sending at a later time. Select the **CANCEL** Softkey to delete the message.

## Predefined Text Messages

Time and effort can be saved in typing text messages that are used repeatedly by saving these messages as a predefined message.

### *Create a Predefined Text Message*

1) While viewing the AUX-TEXT MESSAGING Page, press the **MENU** Key to display the Page Menu.
2) Turn either **FMS** Knob to select 'Edit Predefined Messages'.
3) Press the **ENT** Key. The PREDEFINED MESSSAGES view is now displayed.
4) Select the **NEW** Softkey.

   **Or**:

   a) Press the **MENU** Key to display the Page Menu.
   b) Turn either **FMS** Knob to place the cursor on 'Draft New Predefined Message'.
   c) Press the **ENT** Key. The PREDEFINED SMS TEXT MESSAGE Window is now displayed.
5) The cursor is displayed in the 'TITLE' field. Enter the desired message title. Entry can be accomplished through the alphanumeric keys on the MFD Controller, or combination of the **FMS** Knob on the controller and softkeys on the MFD. The **FMS** Knob is used to enter letters and numbers, or numbers can be entered from the MFD by selecting the **NUMBERS** Softkey. Select the **CAP LOCK** Softkey to create upper and lower case alpha characters. Special characters can be accessed by selecting the **SYMBOLS** Softkey.
6) Press the **ENT** Key. The cursor is now displayed in the 'MESSAGE' field.
7) Enter the desired message using any combination of entry methods as described in step 5.
8) Press the **ENT** Key.
9) Select the **SAVE** Softkey. The new predefined message is now shown in the displayed list. Selecting the **CANCEL** Softkey will delete the message without saving.
10) Press the **MENU** Key to display the Page Menu.

**11)** Turn either **FMS** Knob to place the cursor on 'Stop Editing Predefined Message'.

**12)** Press the **ENT** Key.

### *Send a Predefined Text Message*

**1)** While viewing the AUX-TEXT MESSAGING Page, select the **NEW** Softkey.

**2)** The TEXT MESSAGE DRAFT Window is now displayed with the cursor in the 'TO' field. Enter the desired telephone number or email address. Entry can be accomplished through the alphanumeric keys on the MFD Controller, or combination of the **FMS** Knob on the controller and softkeys on the MFD. The **FMS** Knob is used to enter letters and numbers, or numbers can be entered from the MFD by selecting the **NUMBERS** Softkey. Select the **CAP LOCK** Softkey to create upper and lower case alpha characters. Special characters can be accessed by selecting the **SYMBOLS** Softkey.

**3)** Press the **ENT** Key. The cursor is now displayed in the 'MESSAGE' field.

**4)** Select the **PREDEFD** Softkey. The PREDEFINED MESSAGE MENU Window is displayed.

**6)** Press the **ENT** Key. The predefined message text is inserted into the message field. If desired, the message can be edited by using the FMS Knobs.

**7)** Press the **ENT** Key.

**8)** Select the **SEND** Softkey to transmit the message.

## Text Message Boxes

Received text messages reside in the Inbox as 'Read' or 'Unread' messages. The Outbox contains 'Sent" and 'Unsent' text messages. Saved messages that are meant to be sent later are stored as Drafts. Each text message box may be viewed separately, or together in any combination.

### *Show Inbox Messages*

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **INBOX** Softkey.

**Or**:

**a)** Press the **MENU** Key to display the Page Menu.

**b)** Turn either **FMS** Knob to place the cursor on 'Show Inbox Messages'.

**c)** Press the **ENT** Key. The message box selected for viewing is indicated at the bottom left of the list window.

### *Show Outbox Messages*

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **OUTBOX** Softkey.

**Or**:

**a)** Press the **MENU** Key to display the Page Menu.

**b)** Turn either **FMS** Knob to place the cursor on 'Show Outbox Messages'.

**c)** Press the **ENT** Key. The message box selected for viewing is indicated at the bottom left of the list window.

### *Show Draft Messages*

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **DRAFTS** Softkey.

**Or**:

**a)** Press the **MENU** Key to display the Page Menu.

**b)** Turn either **FMS** Knob to place the cursor on 'Show Draft Messages'.

**c)** Press the **ENT** Key. The message box selected for viewing is indicated at the bottom left of the list window.

## Arranging Text Messages

The viewed messages may be listed according to the date/time the message was sent or received, the type of message (read, unread, sent, unsent, etc.), or by message address.

### *View Messages Sorted by Message Date/Time:*

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **TIME** Softkey.

**Or**:

**a)** Press the **MENU** Key to display the Page Menu.

**b)** Turn either **FMS** Knob to place the cursor on 'Sort By Date/Time'.

**c)** Press the **ENT** Key. The sorting selection is indicated at the bottom center of the list window.

### *View Messages Sorted by Message Type*

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **TYPE** Softkey.

**Or**:

**a)** Press the **MENU** Key to display the Page Menu.

**b)** Turn either **FMS** Knob to place the cursor on 'Sort By Type'.

**c)** Press the **ENT** Key. The sorting selection is indicated at the bottom center of the list window.

### *View Messages Sorted by Address:*

While viewing the AUX-TEXT MESSAGING Page, select the **ARRANGE** Softkey, then select the **ADDRESS** Softkey.

**Or**:

**a)** Press the **MENU** Key to display the Page Menu.

**b)** Turn either **FMS** Knob to place the cursor on 'Sort By Address'.

**c)** Press the **ENT** Key. The sorting selection is indicated at the bottom center of the list window.

## Viewing The Content of a Text Message

**1)** While viewing the AUX-TEXT MESSAGING Page, select the desired message box.

**2)** Press the **FMS** Knob to activate the cursor.

**3)** Turn either **FMS** Knob to select the desired message.

**4)** Select the **VIEW** Softkey.

**Or**:

Press the **ENT** Key.

**Or**:

**a)** Press the **MENU** Key to display the Page Menu.

**b)** Turn either **FMS** Knob to place the cursor on 'View Selected Message'.

**c)** Press the **ENT** Key.

**5)** To close the text message, select the **CLOSE** Softkey.

**Or**:

a) Press the **MENU** Key to display the Page Menu.
b) Turn either **FMS** Knob to place the cursor on 'Close Message'.
c) Press the **ENT** Key.

### Mark Selected Message As Read

1) While viewing the Inbox on the AUX-TEXT MESSAGING Page, press the **FMS** Knob to activate the cursor.
2) Turn either **FMS** Knob to select the desired message.
3) Select the **MRK READ** Softkey.

**Or**:

a) Press the **MENU** Key to display the Page Menu.
b) Turn either **FMS** Knob to place the cursor on 'Mark Selected Message As Read'.
c) Press the **ENT** Key.

The message symbol now indicates the message has been opened.

### Mark All Messages As Read

1) While viewing the Inbox on the AUX-TEXT MESSAGING Page, press the **MENU** Key to display the Page Menu.
2) Turn either **FMS** Knob to place the cursor on 'Mark All New Messages As Read'.
3) Press the **ENT** Key. A confirmation window is displayed.
4) With cursor highlighting 'YES', press the **ENT** Key. The message symbols now indicate all the message have been opened.

### Delete a Message

1) While viewing the Inbox on the AUX-TEXT MESSAGING Page, press the **FMS** Knob to activate the cursor.
2) Turn either **FMS** Knob to select the desired message.
3) Select the **DELETE** Softkey.

**Or**:

a) Press the **MENU** Key to display the Page Menu.
b) Turn either **FMS** Knob to place the cursor on 'Delete Selected Message'.
c) Press the **ENT** Key.

## WI-FI CONNECTIONS (OPTIONAL)

Control and monitoring of Wi-Fi functions are accomplished through the AUX-WI-FI SETUP Page.

### Viewing the Wi-Fi Setup Page

1) Turn the large **FMS** Knob on the MFD to select the AUX page group.
2) Turn the small **FMS** Knob to select REPORTS/DATA LINK.
3) If necessary, select the **WI-FI** Softkey to display the AUX-WI-FI SETUP Page.

### Setting Up a New Wi-Fi Connection

1) Select the **AVAIL** Softkey on the MFD. A list of available networks will be displayed in the AVAILABLE NETWORKS window. Signal strength is shown for each network, as well as security methods and whether the network has been saved in the system's memory.
2) If necessary, select the **RESCAN** Softkey to have the system scan again for available networks.
3) Press the **FMS** Knob to place the cursor in the list of networks.
4) Turn either **FMS** Knob to select the desired network.
5) Select the **CONNECT** Softkey.
6) If the network is secured, enter the necessary passcode. Use the **FMS** Knobs to enter the desired alpha numeric characters. Select the **CAP LOCK** Softkey to enter upper case letters. If there is no security associated with the network, proceed to step 9.
7) Press the **ENT** Key. 'OK' will be highlighted.
8) Press the **ENT** Key again.
9) The SAVE SETTINGS window is now displayed with the cursor highlighting 'SAVE CONNECTION'.
10) The selected network can be saved to system memory to make reconnection easier at a later time.

    To connect the selected network without saving:

    **a)** Turn the large FMS Knob to move the cursor to highlight 'CONNECT'.
    **b)** Press the **ENT** Key.

To save and connect the selected network:

**a)** Press the **ENT** Key. A checkmark is placed in the checkbox and the cursor moves to the airport field.

**b)** Using the **FMS** Knobs, enter an airport identifier to be associated with the saved network. This aids in identifying the network later in the event of duplicate network names.

**c)** Press the **ENT** Key. The cursor moves to 'CONNECT'.

**d)** Press the **ENT** Key again to connect to the selected network.

### Editing a Saved Network

**1)** While viewing list of saved networks, press the **FMS** Knob to activate the cursor.

**2)** Turn either **FMS** Knob to highlight the network to be edited.

**3)** Pressing the **ENT** Key at this point will check or uncheck the AUTO CONNECT checkbox. When a checkmark is present, the system will automatically connect to the network when within range.

**4)** Select the **EDIT** Softkey. The cursor now appears in the CONNECTION SETTINGS window.

**5)** Turn the large **FMS** Knob to select the network attribute to be edited.

**6)** Turn the small **FMS** Knob to begin editing the field.

**7)** When the entry is complete, press the **ENT** Key.

**8)** Turn the large **FMS** Knob or press the **ENT** Key until 'SAVE' is highlighted.

**9)** Press the **ENT** Key.

### Disconnecting a Wi-Fi Network

Select the **DISCNCT** Softkey.

### Deleting a Saved Wi-Fi Network

**1)** While viewing the list of saved networks, press the **FMS** Knob to activate the cursor.

**2)** Turn either **FMS** Knob to highlight the network to be deleted.

**3)** Select the **DELETE** Softkey. The selected network is removed from the list.

## MAINTENANCE LOGS

The system provides recording of CAS, CMC, exceedances, and other critical aircraft data that occur while the aircraft is on the ground or in flight. This information may be used by aircraft maintenance personel in determining specific maintenance requirements.

The Maintenance Logs feature is accessible by entering a password. No pilot action is required.

### Viewing the Maintenance Logs Page:

1) Turn the large **FMS** Knob on the MFD to select the AUX page group.
2) Turn the small **FMS** Knob to select 'MAINTENANCE LOG'. The AUX-MAINTENANCE LOGS Page is now displayed.
3) Select the **PSWD** Key to enter the password.
4) Enter the password.
5) Press the **ENT** Key to access the page.

## SIRIUSXM SATELLITE RADIO (SUBSCRIPTION OPTIONAL)

The XM Radio Page provides information and control of the audio entertainment features of the SiriusXM Satellite Radio.

### Selecting the XM Radio Page

1) Turn the large **FMS** Knob to select the AUX Page Group.
2) Turn the small **FMS** Knob to select XM RADIO.
3) Select the **RADIO** Softkey to show the XM Radio Page where audio entertainment is controlled.

### Active Channel and Channel List

The Active Channel Box on the XM Radio Page displays the currently selected channel. The Channels List Box of the XM Radio Page shows a list of the available channels for the selected category.

### Selecting a Category

The Category Box of the XM Radio Page displays the currently selected category of audio.

1) Select the **CATGRY** Softkey on the XM Radio Page.
2) Select the **CAT +** and **CAT -** softkeys to cycle through the categories.

   **Or**:

   Turn the small **FMS** Knob to display the 'Categories' list. Highlight the desired category with the small **FMS** Knob.
3) Press the **ENT** Key.

### Select an Available Channel within the Selected Category

1) While on the XM Radio Page, select the **CHNL** Softkey.
2) Select the **CH +** Softkey to go down through the list in the Channel Box, or move up the list with the **CH –** Softkey.

   **Or**:

   Press the **FMS** Knob to highlight the channel list and turn the large **FMS** Knob to scroll through the channels.
3) With the desired channel highlighted, press the **ENT** Key.

### Entering a Channel Directly

1) While on the XM Radio Page, select the **CHNL** Softkey.
2) Select the **DIR CH** Softkey. The channel number in the Active Channel Box is highlighted.
3) Select the numbered softkeys located on the bottom of the display to directly select the desired channel number.
4) Press the **ENT** Key to activate the selected channel.

### Assigning Channel Presets

Up to 15 channels from any category can be assigned a preset number.

1) On the XM Radio Page, with the desired channel active, select the **PRESETS** Softkey to access the first five preset channels (**PS1 - PS5**).
2) Select the **MORE** Softkey to access the next five channels (**PS6 – PS10**), and again to access the last five channels (**PS11 – PS15**). Selecting the **MORE** Softkey repeatedly cycles through the preset channels.
3) Select the **SET** Softkey.
4) Select any one of the (**PS1 - PS15**) softkeys to assign a number to the active channel.

### Adjusting Volume

1) With the XM Radio Page displayed, press the **VOL** Softkey.
2) Press the **VOL –** Softkey to reduce volume or press the **VOL +** Softkey to increase volume. (Once the **VOL** Softkey is pressed, the volume can also be adjusted using the small **FMS** Knob.)

### Mute SiriusXM Audio

1) Select the XM Radio Page or XM Information Page.
2) Press the **MUTE** Softkey to mute the audio. Press the **MUTE** Softkey again to unmute the audio.

## ELECTRONIC CHECKLISTS (OPTIONAL)

The system accesses the checklists from an SD card inserted into the card slot. If the SD card contains an invalid checklist file or no checklist, the Power-up Page messages display 'Checklist File: Invalid' or 'Checklist File: N/A' (not available) and the **CHKLIST** Softkey is not available.

The following colors are used for checklist items:

- Light Blue - Items not selected or checked
- White - Item is selected
- Green - Item has been checked
- Gray - General notes
- Yellow - Caution notes
- Red - Warning notes

### Accessing and Navigating Checklists

1) From any page on the MFD, select the **CHKLIST** Softkey or turn the large **FMS** Knob to select the Checklist Page.
2) Turn the large **FMS** Knob to select the 'GROUP' field.
3) Turn the small **FMS** Knob to select the desired procedure and press the **ENT** Key.
4) Turn the large **FMS** Knob to select the 'CHECKLIST' field.
5) Turn the small **FMS** Knob to select the desired checklist and press the **ENT** Key. The selected checklist item is indicated with white text surrounded by a white box.

6) Press the **ENT** Key or select the **CHECK** Softkey to check the selected checklist item. The line item turns green and a checkmark is placed in the associated box. The next line item is automatically selected for checking.

   Either **FMS** Knob can be used to scroll through the checklist and select the desired checklist item.

   Press the **CLR** Key or select the **UNCHECK** Softkey to remove a check mark from an item.

7) When all checklist items have been checked, '*Checklist Finished*' is displayed in green text at the bottom left of the checklist window and 'GO TO NEXT CHECKLIST?' is highlighted. If 'GO TO NEXT CHECKLIST?' is selected prior to checking all the checklist items, '*CHECKLIST NOT FINISHED*' will be displayed in yellow text.

8) Press the **ENT** Key. If 'GO TO NEXT CHECKLIST?' is displayed when pressing the **ENT** Key, the next checklist in the group will be displayed. If 'EXIT CHECKLISTS?' is displayed when pressing the **ENT** Key, the system will exit the Checklist Page.

9) Select the **EXIT** Softkey to exit the Checklist Page and return to the page last viewed. When returning to the Checklist Page after pressing the **EXIT** Softkey, the system will return to the last selected checklist item.

### Immediately Accessing Emergency Procedures

1) From any page on the MFD, select the **CHKLIST** Softkey or turn the large **FMS** Knob to select the Checklist Page.

2) Select the **EMERGCY** Softkey.

3) Turn the **FMS** Knob to select the desired emergency checklist and press the **ENT** Key.

4) Press the **ENT** Key or select the **CHECK** Softkey to check the selected emergency checklist item. The line item turns green and a checkmark is placed in the box next to it. The next line item is automatically highlighted for checking.

   Either **FMS** Knob can be used to scroll through the checklist and select the desired checklist item.

   Press the **CLR** Key or select the **UNCHECK** Softkey to remove a check mark from an item.

5) When all checklist items have been checked, '*Checklist Finished*' is displayed in green text at the bottom left of the checklist window and 'GO TO NEXT CHECKLIST?' is highlighted. If 'GO TO NEXT CHECKLIST?' is selected prior to checking all the checklist items, '*CHECKLIST NOT FINISHED*' will be displayed in yellow text.

6) Press the **ENT** Key to advance to the next checklist.

7) Select the **RETURN** Softkey to return to the previous checklist.

8) Select the **EXIT** Softkey to exit the Checklist Page and return to the page last viewed.

## PILOT PROFILES

When the system is powered on, the last selected pilot profile is shown on the MFD power-up screen. The system can store up to 25 profiles; the currently active profile, the amount of memory used, and the amount of memory available are shown at the top of the AUX - System Setup Page in the box labeled 'Pilot Profile'.

### Creating a Profile

1) Use the **FMS** Knob to select the AUX - System Setup Page.

2) Press the **FMS** Knob momentarily to activate the flashing cursor.

3) Turn the large **FMS** Knob to highlight 'CREATE' in the Pilot Profile Box.

4) Press the **ENT** Key. A 'Create Profile' window is displayed.

5) Use the **FMS** Knob to enter a profile name up to 16 characters long and press the **ENT** Key. Pilot profile names cannot begin with a blank as the first letter.

6) In the next field, use the small **FMS** Knob to select the desired settings upon which to base the new profile. Profiles can be created based on Garmin factory defaults, default profile settings (initially based on Garmin factory defaults unless edited by the pilot), or current system settings.

7) Press the **ENT** Key.

8) With 'CREATE' highlighted, press the **ENT** Key to create the profile.

   **Or:**

   Use the large **FMS** Knob to select 'CREATE and ACTIVATE' and press the **ENT** Key to activate the new profile.

9) To cancel the process, select 'CANCEL' with the large **FMS** Knob and press the **ENT** Key.
10) Press the **FMS** Knob to deactivate the cursor.

### Selecting an Active Profile

1) Use the **FMS** Knob to select the AUX - System Setup Page.
2) Press the **FMS** Knob momentarily to activate the flashing cursor.
3) Turn the large **FMS** Knob to highlight the active profile field in the Pilot Profile Box.
4) Turn the small **FMS** Knob to display the pilot profile list and highlight the desired profile.
5) Press the **ENT** Key. The system loads and displays the system settings for the selected profile.
6) Press the **FMS** Knob to deactivate the cursor.

### Renaming a Profile

1) Use the **FMS** Knob to select the AUX - System Setup Page.
2) Press the **FMS** Knob momentarily to activate the flashing cursor.
3) Turn the large **FMS** Knob to highlight 'RENAME' in the Pilot Profile Box.
4) Press the **ENT** Key.
5) In the 'Rename Profile' window, turn the **FMS** Knob to select the profile to rename.
6) Press the **ENT** Key.
7) Use the **FMS** Knob to enter a new profile name up to 16 characters long and press the **ENT** Key.
8) With 'RENAME' highlighted, press the **ENT** Key.
9) To cancel the process, use the large **FMS** Knob to select 'CANCEL' and press the **ENT** Key.
10) Press the **FMS** Knob to deactivate the cursor.

## Deleting a Profile

***NOTE:*** *The profile that is currently active cannot be deleted. If this is the desired profile to delete, select another profile, then delete the desired profile.*

1) Use the **FMS** Knob to select the AUX - System Setup Page.
2) Press the **FMS** Knob momentarily to activate the flashing cursor.
3) Turn the large **FMS** Knob to highlight 'DELETE' in the Pilot Profile Box.
4) Press the **ENT** Key.
5) In the 'Delete Profile' window, turn the **FMS** Knob to select the profile to delete.
6) Press the **ENT** Key.
7) With 'DELETE' highlighted, press the **ENT** Key.
8) To cancel the process, use the large **FMS** Knob to select 'CANCEL' and press the **ENT** Key.
9) Press the **FMS** Knob to deactivate the cursor.

## Importing a Profile from an SD Card

1) Insert an SD card containing the pilot profile(s) into the top card slot on the MFD.
2) Turn the **FMS** Knob to select the AUX - System Setup Page.
3) Select the **IMPORT** Softkey.
4) The system displays the Pilot Profile Importing Window with 'IMPORT' highlighted. To change the selected profile to be imported from the SD card (shown as 'SELECT FILE'), turn the large FMS Knob to highlight the profile file name, then turn the small **FMS** Knob to highlight a profile from the list, and press the **ENT** Key.
5) If desired, the profile name to be used after profile has been imported can be changed by turning the **FMS** Knob to highlight the 'PROFILE NAME' field, then use the large and small **FMS** Knobs to enter the name, and press the **ENT** Key. Imported profile names cannot begin with a blank space or be named 'DEFAULT', 'GARMIN DEFAULTS' or 'DEFAULT SETTINGS'.
6) With 'IMPORT' highlighted, press the **ENT** Key.

**7)** If the imported profile name is the same as an existing profile on the system, the system displays an 'Overwrite existing file? OK or CANCEL' prompt. Press the **ENT** Key to replace profile on the system with the profile imported from the SD card, or turn the **FMS** Knob to highlight 'CANCEL' and press the **ENT** Key to return to the Pilot Profile Importing Window.

**8)** If successful, the system displays 'Pilot profile import succeeded.' in the IMPORT RESULTS window below. With 'OK' highlighted, press the **ENT** or **CLR** Keys or press the **FMS** Knob to return to the AUX - System Setup Page. The imported profile becomes the active profile.

### Exporting a Profile to an SD Card

**1)** Insert the SD card for storing the Pilot Profile into the top card slot on the MFD.

**2)** Turn the **FMS** Knob to select the AUX - System Setup Page.

**3)** If necessary, activate the desired pilot profile to export. Only the currently active Pilot Profile can be exported.

**4)** Select the **EXPORT** Softkey. The system displays the Pilot Profile Exporting Window.

**5)** To export the pilot profile using the current supplied name, press the **ENT** Key with 'EXPORT' highlighted. To change the profile file name turn the large **FMS** Knob to highlight the 'SELECT FILE' field, then enter the new name with the large and small FMS Knobs, then press the **ENT** Key. Then press the **ENT** Key with 'EXPORT' highlighted.

**6)** If the profile name to be exported is the same as an existing profile file name on the SD card, the system displays an 'Overwrite existing file? OK or CANCEL' prompt. Press the **ENT** Key to replace the profile on the SD card with the profile to be exported, or turn the FMS Knob to highlight 'CANCEL' and press the **ENT** Key to return to the Pilot Profile Exporting Window without exporting the profile.

**7)** If successful, the EXPORT RESULTS window displays 'Pilot profile export succeeded.' With 'OK' highlighted, press the **ENT** or **CLR** Keys, or press the **FMS** Knob to return to the AUX - System Setup Page.

Blank Page

# ABNORMAL OPERATION

*NOTE: The Embraer Phenom 300 Airplane Flight Manual (AFM) always takes precedence over the information found in this section.*

## ENGINE

When an engine failure occurs, besides the CAS message corresponding to the failed engine ("E1 FAIL" or "E2 FAIL"), the corresponding N1 gauge displays the annunciation "FAIL" in yellow inverse video (black text on yellow background). Detection of an engine fire causes the red inverse video (white text on red background) annunciation "FIRE" to be displayed over the ITT gauge.

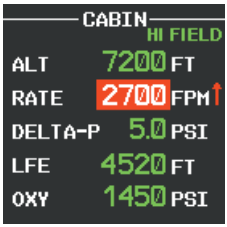
Engine Failure Indication

Engine Fire Indication

## CABIN PRESSURIZATION

If the cabin altitude (ALT) reaches a caution level, the readout displays black text on a yellow background. When a high cabin altitude warning occurs, the readout is displayed with white text on a red background, and the corresponding CAS message "CAB ALTITUDE HI" is issued.

A cabin pressure change rate (RATE) caution readout is indicated with black text on a yellow background. If low flow or a cabin leak is detected, the cabin pressure change rate readout displays white text on a red background and the trend arrow turns red.




Cabin Leak Indication

Excessive cabin differential pressure (DELTA-P) causes the pressure readout to display a yellow background and black text; warnings are indicated with red background with white readout text. The CAS message "CAB DELTA-P FAIL" accompanies this condition.

Low oxygen system pressure (OXY) is indicated by a yellow background and black text. The CAS message "OXY LO PRES" is also issued.

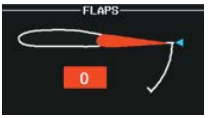
If the pilot selected landing field elevation (LFE) differs by more than five feet from the FMS LFE value, the LFE readout is shown as black text with a yellow background for 30 seconds.

A red "X" is displayed in place of any readout on the Cabin Display that is invalid or out of range.

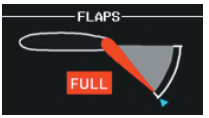
## FLAPS

The following denote abnormal flap conditions:

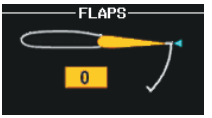
- Flaps not in position for takeoff – Flap pointer turns red and readout turns red inverse video (white text on red background) (A and B).
- Flaps have failed or become jammed – Flap pointer turns yellow and readout turns yellow inverse video (black text on yellow background) (C)
- Flaps unavailable – Flap pointer is removed and readout turns light blue inverse video (black text on light blue background) (D)
- Flaps position data invalid – Flap pointer and readout displayed with a red "X"



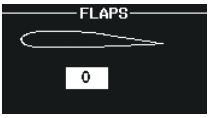

A - Flaps Retracted at Takeoff




B - Flaps at FULL (Landing) Position at Takeoff




C - Flaps Failed

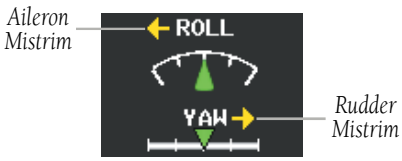



D - Flaps Unavailable

## TRIM

Aileron or rudder mistrim are denoted with yellow arrows pointing in the direction of mistrim on the Roll and Yaw Trim indicators (A).

If takeoff configuration has been selected and the pitch trim position is not within the green band on the pitch trim scale, the pointer turns red and readout turns red inverse video (white text on red background) (B).




A - Mistrim

B - Pitch Trim Outside Takeoff Configuration

## REVERSIONARY MODE

If the system detects a failure in PFD1 or MFD, reversionary mode is entered automatically. Reversionary mode must be entered manually in the case of PFD2 failure. In reversionary mode, critical flight instrumentation is combined with engine instrumentation on the remaining display.

Manual activation of reversionary display mode is accomplished by pressing the **DISPLAY BACKUP** Button on the appropriate audio panel.

- **PFD1** – By pressing the **DISPLAY BACKUP** Button on the left audio panel.
- **MFD** – By pressing the **DISPLAY BACKUP** Button on the left or the right audio panel.
- **PFD2** – By pressing the **DISPLAY BACKUP** Button on the right audio panel.

## ABNORMAL COM OPERATION

When a COM tuning failure is detected by the system, the emergency frequency (121.500 MHz) is automatically loaded into the active frequency field of the COM radio for which the tuning failure was detected. In the event of a failure of both PFDs, the emergency frequency (121.500 MHz) automatically becomes the active frequency on both COM radios.

## AUDIO PANEL FAIL-SAFE OPERATION

If there is a failure of both Audio Panels, a fail-safe circuit connects the pilot's headset and microphone directly to the COM1 transceiver and the copilot's headset directly to the COM2 transceiver. Audio is not available on the speakers. If there is a failure of one Audio Panel, that side only has access to their respective on-side fail-safe COM.

***NOTE:*** *Audio is not available on the speakers in case of an Audio Panel and its cross-side GIA unit simultaneous failure.*

If there is a failure of one Audio Panel, the remaining Audio Panel does not have access to the other side's COM or NAV. For example, if the pilot side Audio Panel fails, the copilot side Audio Panel has access to all the radios except for COM1 and NAV1. In this case, the copilot can receive the audio from NAV2 and operate COM2 for transmission/reception.

In addition, if there is a failure of one Audio Panel, the following functions are no longer available on the failed side; NAV/ILS audio, speaker, cockpit/cockpit-passengers intercom, aural warning alerts on headset, entertainment inputs, and digital recording radio. Also, if a stereo headset is in use, and an Audio Panel fails, only the left channel will be heard in the headphones.

## HAZARD DISPLAYS WITH LOSS OF GPS POSITION

If GPS position is lost, or becomes invalid, selected hazards being displayed on the Navigation Map Page are removed until GPS position is again established.

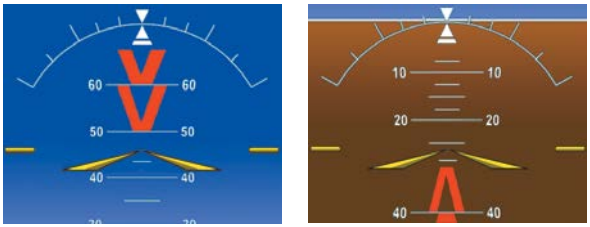
**Loss of Hazard Functions with Loss of GPS Position**

## UNUSUAL ATTITUDES

The PFD 'declutters' when the aircraft enters an unusual attitude. Only the primary functions are displayed in these situations.

The following information is removed from the PFD (and corresponding softkeys are disabled) when the aircraft experiences unusual attitudes:

- Traffic Annunciations
- AFCS Annunciations
- Flight Director Command Bars
- Inset Map
- Temperatures
- DME Information Window
- Wind Data
- Selected Heading Box
- Selected Course Box
- Transponder Status Box
- System Time
- PFD Setup Menu
- Windows displayed in the lower right corner of the PFD:
  - Timer/References
  - Nearest Airports
  - Flight Plan
  - Messages
  - Procedures
  - ADF/DME Tuning
- Barometric Minimum Descent Altitude Box
- Glideslope, Glidepath, and Vertical Deviation Indicators
- Altimeter Barometric Setting
- Selected Altitude
- VNV Target Altitude




**Extreme Pitch Indication**

## DEAD RECKONING

While in Enroute or Oceanic phase of flight, if the system detects an invalid GPS solution or is unable to calculate a GPS position, the system automatically reverts to Dead Reckoning (DR) Mode. In DR Mode, the system uses its last-known position combined with continuously updated airspeed and heading data (when available) to calculate and display the aircraft's current estimated position.

***NOTE:*** *Dead Reckoning Mode only functions in Enroute (ENR) or Oceanic (OCN) phase of flight. In all other phases, an invalid GPS solution produces a "NO GPS POSITION" annunciation on the map and the system stops navigating in GPS Mode.*

DR Mode is indicated by the appearance of the letters 'DR' superimposed in yellow over the 'own aircraft' symbol as shown in the following figure. In addition, 'DR' is

prominently displayed, also in yellow, on the HSI slightly above and to the right of the aircraft symbol on the CDI as shown in the following figure. Also, the CDI deviation bar is removed from the display. Lastly, but at the same time, a 'GPS NAV LOST' alert message appears on the PFD.

Normal navigation using GPS/SBAS source data resumes automatically once a valid GPS solution is restored.

It is important to note that estimated navigation data supplied by the system in DR Mode may become increasingly unreliable and must not be used as a sole means of navigation. If, while in DR Mode, airspeed and/or heading data is also lost or not available, the DR function may not be capable of estimating your position and, consequently, the system may display a path that is different than the actual movement of the aircraft. Estimated position information displayed by the system through DR while there is no heading and/or airspeed data available should not be used for navigation.

DR Mode is inherently less accurate than the standard GPS/SBAS Mode due to the lack of satellite measurements needed to determine a position. Changes in wind speed and/or wind direction compounds the relative inaccuracy of DR Mode. Because of this degraded accuracy, the crew must maintain position awareness using other navigation equipment until GPS-derived position data is restored.

*CDI 'DR' Indication on PFD*

*Symbolic Aircraft (Map pages and Inset Map)*

**Dead Reckoning Indications**

As a result of operating in DR Mode, all GPS-derived data is computed based upon an estimated position and is displayed as yellow text on the display to denote degraded navigation source information. This data includes the following:

- Navigation Status Box fields except Active Leg, TAS, and DTK
- GPS Bearing Pointer
- Wind data and pointers in the Wind Data Box on the PFD
- Current Track Indicator
- All Bearing Pointer Distances
- Active Flight Plan distances, bearings, and ETE values

Also, while the system is in DR Mode, the autopilot will not couple to GPS, and TAWS is disabled. Additionally, the accuracy of all nearest information (airports, airspaces, and waypoints) is questionable. Finally, airspace alerts continue to function, but with degraded accuracy.

## SUSPECTED AUTOPILOT MALFUNCTION

***NOTE:*** *Consult the aircraft documentation for the location of circuit breakers as well as specifics that may supplement or amplify this procedure.*

If an autopilot failure or trim failure is suspected to have occurred, perform the following steps:

**1)** Firmly grasp the control wheel.

**2)** Press and hold the **AP DISC** Switch. The autopilot will disconnect and power is removed from the trim motor. Power is also removed from all primary servo motors and engaged solenoids. Note the visual and aural alerting indicating autopilot disconnect.

**3)** Retrim the aircraft as needed. Substantial trim adjustment may be needed.

**4)** Pull the appropriate circuit breaker(s) to electrically isolate the servo and solenoid components.

**5)** Release the **AP DISC** Switch.

## OVERPOWERING AUTOPILOT SERVOS

In the context of this discussion, "overpowering" refers to any pressure or force applied to the pitch controls when the autopilot is engaged. A small amount of pressure or force on the pitch controls can cause the autopilot automatic trim to run to an out-of-trim condition. Therefore, any application of pressure or force to the controls should be avoided when the autopilot is engaged.

Overpowering the autopilot during flight will cause the autopilot's automatic trim to run, resulting in an out-of-trim condition or cause the trim to hit the stop if the action is prolonged. In this case, larger than anticipated control forces are required after the autopilot is disengaged.

The following steps should be added to the preflight check:

**1)** Check for proper autopilot operation and ensure the autopilot can be overpowered.

**2)** Note the forces required to overpower the autopilot servo clutches.

# ANNUNCIATIONS & ALERTS

## CAS MESSAGES

### Warning Messages

See the Airplane Flight Manual (AFM) for recommended pilot actions. Accompanied by a triple chime tone which repeats until acknowledged.

| Message | Description |
|---|---|
| BAG SMK | Smoke detected in baggage compartment |
| CAB ALTITUDE HI | Cabin altitude pressure altitude high |
| DOOR EMER OPEN | Emergency door open |
| DOOR PAX OPEN | Passenger door open |
| E1 FIRE | Fire in engine 1 |
| E2 FIRE | Fire in engine 2 |
| E1 OIL LO PRES | Low oil pressure in engine 1 |
| E2 OIL LO PRES | Low oil pressure in engine 2 |
| ELEC EMERGENCY | Generators offline |
| ELEC XFR FAIL | Generators offline and electrical emergency transfer has failed |
| LG LEVER DISAG | Landing gear position and control lever disagreement |
| NO TO CONFIG | No takeoff configuration |

### Caution Messages

See the Airplane Flight Manual (AFM) for recommended pilot actions. Accompanied by a single chime tone which repeats until acknowledged.

| Message | Description |
|---|---|
| ADS 1 FAIL | ADS 1 offline or failed |
| ADS 2 FAIL | ADS 2 offline or failed |
| ADS 1 HTR FAIL | Pitot heater 1 offline or heater element failed |
| ADS 2 HTR FAIL | Pitot heater 2 offline or heater element failed |
| AHRS 1 FAIL | AHRS 1 failure |
| AHRS 2 FAIL | AHRS 2 failure |
| A-I E1 FAIL | Anti-ice system failure in engine 1 |
| A-I E2 FAIL | Anti-ice system failure in engine 2 |
| A-I LO CAPACITY | Not enough thermal energy available for WHSAIS (Wing and Horizontal Stabilizer Anti-ice System) operation |
| A-I WINGSTB FAIL | Component failure (AIV, pressure transducers, AMS Controller, other) |

| Message | Description |
|---|---|
| A-I WINGSTB INHB | WHSAIS switched ON outside the icing envelope. Or, aircraft is in single bleed configuration and above the 15,000 ft. icing envelope when WHSAIS is switched on. |
| A-I WINGSTB LEAK | Bleed hot air leakage at WHSAIS pneumatic ducting |
| AMS CTRL FAIL | Pneumatic sources and icing protection are not available |
| ANTI-SKID FAIL | Anti-skid function lost; main brake still available |
| AP FAIL | Loss of AP function |
| AP PITCH MISTRIM | Airplane mistrimmed in pitch axis when AP is engaged |
| AP ROLL MISTRIM | Airplane mistrimmed in roll axis when AP is engaged |
| AUDIO PNL 1 FAIL | Audio panel 1 is offline |
| AUDIO PNL 2 FAIL | Audio panel 2 is offline |
| AURAL WRN FAIL | Aural warning system failure due to non-communicating LRUs |
| AUTO PTRIM FAIL | Auto pitch trim failure; other pitch trim functions still available |
| BAG SMK FAIL | Baggage compartment smoke detector has failed |
| BATT DISCHARGE | Battery discharging under normal operation |
| BATT 1 OFF BUS | Battery 1 offline |
| BATT 2 OFF BUS | Battery 2 offline |
| BATT EXCEEDANCE | Battery voltage has exceeded 29 VDC |
| BLEED 1 FAIL | Bleed 1 system not under control. |
| BLEED 2 FAIL | Bleed 2 system not under control. |
| BLEED 1 LEAK | Bleed 1 hot air leakage at some region of the ducting |
| BLEED 2 LEAK | Bleed 2 hot air leakage at some region of the ducting |
| BLEED 1 OVERPRES | Pressure in bleed ducting is higher than an acceptable value chosen to not compromise ECS and Anti-ice components integrity |
| BLEED 2 OVERPRES | Pressure in bleed ducting is higher than an acceptable value chosen to not compromise ECS and Anti-ice components integrity |
| BRK FAIL | Main brake system lost |
| CAB DELTA-P FAIL | Excessive cabin pressure differential |
| CLUTCH PIT FAIL | Pitch slip clutch maintenance test failed |
| CLUTCH ROL FAIL | Roll slip clutch maintenance test failed |
| CLUTCH VNTL FAIL | Ventral slip clutch maintenance test failed |
| CLUTCH YAW FAIL | Yaw slip clutch maintenance test failed |
| CONFIG MDL FAIL | Master Configuration Module failed or non-communicative |
| DOORBAG AFT OPEN | Crew baggage door open |
| DOORBAG LH OPEN | Forward left-hand baggage door open |
| DOORBAG RH OPEN | Forward right-hand baggage door open |
| DUCT 1 OVERTEMP | Duct 1 temperature over specified safe value |
| DUCT 2 OVERTEMP | Duct 2 temperature over specified safe value |

| Message | Description |
|---|---|
| E1 CTRL FAULT | Engine 1 responds slowly or not at all to thrust commands |
| E2 CTRL FAULT | Engine 2 responds slowly or not at all to thrust commands |
| E1 FAIL | Uncommanded shutdown detected for engine 1 |
| E2 FAIL | Uncommanded shutdown detected for engine 2 |
| E1 FIRE DET FAIL | Fire detection system failure in engine 1 |
| E2 FIRE DET FAIL | Fire detection system failure in engine 2 |
| E1 FIREX FAIL | Fire extinguisher failure in engine 1 |
| E2 FIREX FAIL | Fire extinguisher failure in engine 2 |
| E1 FUEL IMP BYP | Fuel filter impending bypass condition for engine 1 |
| E2 FUEL IMP BYP | Fuel filter impending bypass condition for engine 2 |
| E1 TLA FAIL | Thrust Lever Angle failure for engine 1 |
| E2 TLA FAIL | Thrust Lever Angle failure for engine 2 |
| E1 TT0 HTR FAIL | Heater failure in engine 1 |
| E2 TT0 HTR FAIL | Heater failure in engine 2 |
| E1 TT0 PROBE ICE | Engine 1 probe frozen |
| E2 TT0 PROBE ICE | Engine 2 probe frozen |
| EBAY LEAK | Leak inside E-Bay |
| EBAY OVHT | Electrical bay over temperature |
| ECS 1 VALVE FAIL | Flow control valve monitor for ECS 1 detected improper valve operation |
| ECS 2 VALVE FAIL | Flow control valve monitor for ECS 2 detected improper valve operation |
| EMER BRK LO PRES | Few emergency brake functions available |
| EMER LT NOT ARM | Emergency lights switch not in ARMED position |
| ENG EXCEEDANCE | Limit exceeded in engine(s) during flight |
| ENG NO DISPATCH | FADEC detected no dispatch fault condition in engine(s) |
| ENG NO TO DATA | No takeoff data entered |
| FLAP FAIL | Loss of flaps deployment or retraction |
| FUEL 1 LO LEVEL | Low fuel level in tank 1 |
| FUEL 2 LO LEVEL | Low fuel level in tank 2 |
| FUEL 1 LO PRES | Fuel pressure low in engine 1 feed line |
| FUEL 2 LO PRES | Fuel pressure low in engine 2 feed line |
| FUEL 1 SOV FAIL | Fuel feed SOV 1 closed or unavailable |
| FUEL 2 SOV FAIL | Fuel feed SOV 2 closed or unavailable |
| FUEL IMBALANCE | Fuel is imbalanced between the tanks |
| FUEL PUMP 1 FAIL | Fuel pump 1 failure |
| FUEL PUMP 2 FAIL | Fuel pump 2 failure |
| FUEL XFEED FAIL | Disagreement between valve command and its feedback |

| Message | Description |
|---|---|
| GEN 1 OFF BUS | Generator 1 offline |
| GEN 2 OFF BUS | Generator 2 offline |
| GEN OVLD | Generator(s) overload |
| GEN START FAULT | Generator start fault |
| GIA 1 FAIL | Failure of GIA 1 |
| GIA 2 FAIL | Failure of GIA 2 |
| GIA 1 OVHT | GIA 1 over temperature |
| GIA 2 OVHT | GIA 2 over temperature |
| GND SPLR FAIL | Loss of ground spoilers |
| HYD HI TEMP | Hydraulic temperature high |
| HYD LO PRES | Hydraulic pressure low |
| HYD SOV 1 FAIL | EDP 1 Fire Shutoff valve was commanded to close, but failed to close |
| HYD SOV 2 FAIL | EDP 2 Fire Shutoff valve was commanded to close, but failed to close |
| ICE CONDITION* | Aircraft is flying in icing conditions |
| LG WOW SYS FAIL | Landing gear weight-on-wheels system failure |
| MFD CONFIG | MFD configuration error |
| MFD FAULT | Fault with the MFD |
| MFD OVHT | MFD over temperature |
| OXY LO PRES | Oxygen system pressure low |
| PARK BRK NOT REL | Parking brake not released |
| PAX OXY NO PRES | Cabin altitude high and passenger oxygen system pressure low |
| PFD 1 CONFIG | PFD 1 configuration error |
| PFD 2 CONFIG | PFD 2 configuration error |
| PFD 1 FAULT | Fault with PFD 1 |
| PFD 2 FAULT | Fault with PFD 2 |
| PFD 1 OVHT | PFD 1 over temperature |
| PFD 2 OVHT | PFD 2 over temperature |
| PRESN AUTO FAIL | Pressurization controller failure |
| PTRIM BKP FAIL | Loss of backup pitch trim actuator |
| PTRIM NML FAIL | Loss of normally-operating pitch trim actuator |
| PUSHER FAIL | Stall Warning & Protection System pusher has failed |
| PUSHER OFF | Stall Warning Pusher is off |
| RUD OVERBOOST | SLRB (Spring Loaded Rudder Booster) uncommanded actuation |
| STBY HTR FAIL | Failure of standby heater |
| STEEP FAIL* | Steep approach mode has failed |
| SWPS FAIL | Stall Warning & Protection System inoperative |

| Message | Description |
|---|---|
| SWPS FAULT | Stall Warning & Protection System activation angles anticipated to conservative settings |
| SWPS UNTESTED | Stall Warning & Protection System has not been tested |
| TCAS FAIL* | Traffic & Collision Avoidance System failure. TCASII installations only. |
| WSHLD 1 HTR FAIL | Windshield 1 heater failure |
| WSHLD 2 HTR FAIL | Windshield 2 heater failure |
| YD FAIL | Loss of yaw damper function |
| YD MISTRIM | Airplane mistrimmed in yaw axis when YD is engaged |

* Optional

## Advisory Messages

See the Airplane Flight Manual (AFM) for recommended pilot actions.

| Message | Description |
|---|---|
| A-I E1 FAULT | Engine 1 Anti-ice system valve failed when commanded to close |
| A-I E2 FAULT | Engine 2 Anti-ice system valve failed when commanded to close |
| A-I E1 ON | Anti-ice system on in engine 1 |
| A-I E2 ON | Anti-ice system on in engine 2 |
| A-I WINGSTB ARM | WINGSTAB toggle switch has been armed prior to takeoff or WHSAIS switched ON above 30,000 ft. |
| A-I WINGSTB ON | WHSAIS is operating |
| ADS 1 SLIP FAIL | ADS 1 side-slip compensation is off |
| ADS 2 SLIP FAIL | ADS 2 side-slip compensation is off |
| ADS HTR SW ON | ADS Probe switch is on |
| AHRS 1 FAULT | Fault with AHRS 1 |
| AHRS 2 FAULT | Fault with AHRS 2 |
| AMS CTRL FAULT | One pneumatic and Anti-ice controller channel is inoperative |
| ATC DLK FAIL* | CPDLC system has failed |
| AUDIO PNL 1 FAULT | Fault with audio panel 1 |
| AUDIO PNL 2 FAULT | Fault with audio panel 2 |
| AURAL WRN FAULT | Partial loss of aural warning function |
| AVNX FAN FAIL | Avionics fan failure |
| BAG SMK FAULT | Two baggage compartment smoke detectors have failed |
| BLEED 1 OFF | Bleed pressure regulator 1 and shut-off valve closed |
| BLEED 2 OFF | Bleed pressure regulator 2 and shut-off valve closed |
| CLUTCH PIT PASS | Pitch slip clutch maintenance test passed |
| CLUTCH PIT PROG | Pitch slip clutch maintenance test in progress |

| Message | Description |
|---|---|
| CLUTCH ROL PASS | Roll slip clutch maintenance test passed |
| CLUTCH ROL PROG | Roll slip clutch maintenance test in progress |
| CLUTCH VNTL PASS | Ventral slip clutch maintenance test passed |
| CLUTCH VNTL PROG | Ventral slip clutch maintenance test in progress |
| CLUTCH YAW PASS | Yaw slip clutch maintenance test passed |
| CLUTCH YAW PROG | Yaw slip clutch maintenance test in progress |
| **DC BUS 1 OFF** | DC bus 1 offline |
| **DC BUS 2 OFF** | DC bus 2 offline |
| DOOR REFUEL OPEN | Refueling door is open |
| E1 CHIP DETECTED | Chip detected by engine 1 oil chip detector |
| E2 CHIP DETECTED | Chip detected by engine 2 oil chip detector |
| E1 FADEC FAULT | FADEC fault in engine 1 |
| E2 FADEC FAULT | FADEC fault in engine 2 |
| E1 OIL IMP BYP | Engine 1 oil filter impending bypass set |
| E2 OIL IMP BYP | Engine 2 oil filter impending bypass set |
| ECS 1 OFF | Flow control valve monitor detected improper valve operation |
| ECS 2 OFF | Flow control valve monitor detected improper valve operation |
| ELEC SYS FAULT | Electrical system fault |
| **EMER BUS OFF** | Emergency bus OFF |
| ENG FIREX DISCH | Engine fire extinguisher discharge |
| FLAP NOT AVAIL | Flaps not available |
| FUEL EQUAL | Fuel quantity asymmetry corrected; XFEED SOV is open |
| FUEL 1 FEED FAULT | DC pump on due to low fuel pressure |
| FUEL 2 FEED FAULT | DC pump on due to low fuel pressure |
| FUEL 1 PSW FAIL | Fuel pressure switch stuck in "high" position |
| FUEL 2 PSW FAIL | Fuel pressure switch stuck in "high" position |
| **GEA 1 FAIL** | Failure of GEA 1 |
| **GEA 2 FAIL** | Failure of GEA 2 |
| **GEA 3 FAIL** | Failure of GEA 3 |
| GPU CONNECTED | Ground power unit connected to the aircraft |
| **GSD 1 FAIL** | GSD 1 non-communicative |
| **GSD 2 FAIL** | GSD 2 non-communicative |
| HSDB FAULT | An LRU has stopped communicating over an HSDB |
| HSDB SW REV POS | HSDB switch in reversionary position |
| HYD SYS FAULT | Degradation of hydraulic system available power |
| ICE DET FAIL* | Ice Detector failure |
| MFD FAN FAIL | Failure of MFD fan |
| OXY SW NOT AUTO | Oxygen system switch in manual mode |

| Message | Description |
|---|---|
| PFD 1 FAN FAIL | Failure of PFD 1 fan |
| PFD 2 FAN FAIL | Failure of PFD 2 fan |
| PTRIM LO RATE | Pitch trim is being actuated in low rate |
| PTRIM SW1 FAIL | Failure of pilot pitch trim switch |
| PTRIM SW2 FAIL | Failure of copilot pitch trim switch |
| RALT FAIL* | Radar altitude failure |
| RAM AIR FAIL | Ram air valve failure |
| RUD BOOST FAIL | Loss of SLRB (Spring Loaded Rudder Booster) force assistance in case of thrust asymmetry |
| SHED BUS OFF | Shed bus off |
| SPDBRK SW DISAG | Speed brake switch position disagrees with the spoiler surfaces position |
| SPOILER FAULT | Ground Spoiler arm logic failed<br>Ground Spoiler command disagree<br>Spoiler position disagree<br>Ground Spoiler Control Valve failed<br>Speed brake command failed<br>Speed brake command inhibit failed |
| STEEP NOT AVAIL* | Steep approach mode is not available |
| SWPS ICE SPEED | Stall Warning System activation angles anticipated due to icing conditions |
| VENTRAL RUD FAIL | Ventral rudder has failed |
| XBLEED FAIL | Cross bleed valve has failed closed or open |
| XBLEED SW OFF | Cross bleed switch is in the OFF position |

* Optional

## COMPARATOR ANNUNCIATIONS

Note that operating the system in the vicinity of metal buildings or other metal structures can cause sensor differences that may result in nuisance miscompare annunciations during start up, shut down, or while taxiing.

| Comparator Window Text | Condition |
|---|---|
| ALT MISCOMP | Difference in altitude sensors is ≥ 200 ft. |
| IAS MISCOMP | If both airspeed sensors detect < 35 knots, this is inhibited. |
| | If either airspeed sensor detects ≥ 35 knots, and the difference in sensors is > 15 kts. |
| | If either airspeed sensor detects ≥ 80 knots, and the difference in sensors is > 10 kts. |
| HDG MISCOMP | Difference in heading sensors is > 10 degrees. |
| PIT MISCOMP | Difference in pitch sensors is > 5 degrees. |
| ROL MISCOMP | Difference in roll sensors is > 6 degrees. |
| ALT NO COMP | No data from one or both altitude sensors. |
| IAS NO COMP | No data from one or both airspeed sensors. |
| HDG NO COMP | No data from one or both heading sensors. |
| PIT NO COMP | No data from one or both pitch sensors. |
| ROL NO COMP | No data from one or both roll sensors.. |

## REVERSIONARY SENSOR ANNUNCIATIONS

| Reversionary Sensor Window Text | Condition |
|---|---|
| BOTH ON ADC1 | Both PFDs are displaying data from the number one Air Data Computer. |
| BOTH ON ADC2 | Both PFDs are displaying data from the number two Air Data Computer. |
| BOTH ON ADCSTBY | Both PFDs are displaying data from the standby air data input. |
| BOTH ON AHRS1 | Both PFDs are displaying data from the number one Attitude & Heading Reference System. |
| BOTH ON AHRS2 | Both PFDs are displaying data from the number two Attitude & Heading Reference System. |
| BOTH ON ATTSTBY | Both PFDs are displaying data from the standby attitude and heading reference input. |
| BOTH ON GPS1 | Both PFDs are displaying data from the number one GPS receiver. |

| Reversionary Sensor Window Text | Condition |
|---|---|
| BOTH ON GPS2 | Both PFDs are displaying data from the number two GPS receiver. |
| USING ADC1 | PFD2 is displaying data from the #1 Air Data Computer. |
| USING ADC2 | PFD1 is displaying data from the #2 Air Data Computer. |
| USING ADCSTBY | PFD1 or PFD2 is displaying data from the standby air data input. |
| USING AHRS1 | PFD2 is displaying data from the #1 AHRS. |
| USING AHRS2 | PFD1 is displaying data from the #2 AHRS. |
| USING ATTSTBY | PFD1 or PFD2 is displaying data from the standby attitude and heading reference input. |
| USING GPS1 | PFD2 is displaying data from the #1 GPS. |
| USING GPS2 | PFD1 is displaying data from the #2 GPS. |

## TAWS-A ALERTS

| Alert Type | PFD/MFD TAWS-A Page Annunciation | MFD Map Page Pop-Up Alert | Aural Message |
|---|---|---|---|
| Reduced Required Terrain Clearance Warning (RTC) | PULL UP | TERRAIN - PULL-UP | "Terrain, Terrain; Pull Up, Pull Up" |
| Imminent Terrain Impact Warning (ITI) | PULL UP | TERRAIN - PULL-UP | "Terrain, Terrain; Pull Up, Pull Up" |
| Reduced Required Obstacle Clearance Warning (ROC) | PULL UP | OBSTACLE - PULL-UP | "Obstacle, Obstacle; Pull Up, Pull Up" |
| Imminent Obstacle Impact Warning (IOI) | PULL UP | OBSTACLE - PULL-UP | "Obstacle, Obstacle; Pull Up, Pull Up" |
| Excessive Descent Rate Warning (EDR) | PULL UP | PULL-UP | "<whoop><whoop> Pull Up" |
| Excessive Closure Rate Warning (ECR) | PULL UP | PULL-UP | "<whoop><whoop> Pull Up" |
| Reduced Required Terrain Clearance Caution (RTC) | TERRAIN | CAUTION - TERRAIN | "Caution, Terrain; Caution, Terrain" |
| Imminent Terrain Impact Caution (ITI) | TERRAIN | CAUTION - TERRAIN | "Caution, Terrain; Caution, Terrain" |
| Reduced Required Obstacle Clearance Caution (ROC) | TERRAIN | CAUTION - OBSTACLE | "Caution, Obstacle; Caution, Obstacle" |

| Alert Type | PFD/MFD TAWS-A Page Annunciation | MFD Map Page Pop-Up Alert | Aural Message |
|---|---|---|---|
| Imminent Obstacle Impact Caution (IOI) | TERRAIN | CAUTION – OBSTACLE | "Caution, Obstacle; Caution, Obstacle" |
| Premature Descent Alert Caution (PDA) | TERRAIN | TOO LOW – TERRAIN | "Too Low, Terrain" |
| Excessive Descent Rate Caution (EDR) | TERRAIN | SINK RATE | "Sink Rate" |
| Excessive Closure Rate Caution (ECR) | TERRAIN | TERRAIN | "Terrain, Terrain" |
| Negative Climb Rate Caution (NCR) | TERRAIN | DON'T SINK | "Don't Sink" |
| Flight Into Terrain High Speed Caution (FIT) | TERRAIN | TOO LOW – TERRAIN | "Too Low, Terrain" |
| Flight Into Terrain Gear Caution (FIT) | TERRAIN | TOO LOW – GEAR | "Too Low, Gear" |
| Flight Into Terrain Flaps Caution (FIT) | TERRAIN | TOO LOW – FLAPS | "Too Low, Flaps" |
| Flight Into Terrain Takeoff Caution (FIT) | TERRAIN | TOO LOW – TERRAIN | "Too Low, Terrain" |
| Glide Slope/Glide Path Deviation Caution (GSD) (depends on approach type) | GLIDESLOPE<br>or<br>GLIDEPATH | GLIDESLOPE<br>or<br>GLIDEPATH | "Glide Slope"<br>or<br>"Glide Path" |
| Altitude Voice Callout (VCO) | None | None | "Five-Hundred"<br>"Four-Hundred"<br>"Three-Hundred"<br>"Two-Hundred"<br>"One-Hundred" |

## TAWS-A System Status Annunciations

| Alert Type | PFD/MFD TAWS-A Page Annunciation | Additional TAWS-A Page Annunciation | Aural Message |
|---|---|---|---|
| TAWS System Fail, Terrain or Obstacle database unavailable or invalid, invalid software configuration, system audio fault | TAWS FAIL | TAWS FAIL | "TAWS System Failure" |
| GPWS System Fail | GPWS FAIL | None | "GPWS System Failure" |
| System Test in progress | TAWS TEST | TAWS TEST | None |
| System Test pass | None | None | "TAWS System Test OK" |
| MFD Terrain or Obstacle database unavailable or invalid. TAWS operating with PFD Terrain or Obstacle databases | None | TERRAIN DATABASE FAILURE | None |
| GPWS System Fail, Radar Altimeter invalid, Altitude or Vertical Speed unavailable | GPWS FAIL | None | "GPWS System Failure" |
| No GPS position | TAWS N/A | NO GPS POSITION | "TAWS Not Available" |
| Excessively degraded GPS signal, Out of database coverage area | TAWS N/A | None | "TAWS Not Available" |
| Out of database coverage area | TAWS N/A | None | "TAWS Not Available" "TAWS Available" when aircraft enters database coverage area. |

## TAWS-A Alert Availability

| TAWS-A Status Annunciation Displayed | TAWS-A Alert Type Available | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | RTC | ITI | ROC | IOI | PDA | EDR | ECR | NCR | FIT | GSD | VCO |
| TAWS TEST | No | No | No | No | No | No | No | No | No | No | No |
| TAWS N/A | No | No | No | No | No | Yes | Yes | Yes | Yes | *No | **Yes |
| TAWS FAIL | No | No | No | No | No | Yes | Yes | Yes | Yes | Yes | **Yes |
| TAWS INH | No | No | No | No | No | Yes | Yes | Yes | Yes | Yes | Yes |
| GPWS FAIL | Yes | Yes | Yes | Yes | Yes | No | No | No | No | No | **Yes |
| GS INH | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes |
| GP INH | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes |
| FLAP OVR | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | #Yes | Yes | Yes |

* GSD alert will be available if a valid ILS is being used for navigation, even if no valid GPS signal is being received.

** VCO alerts are not issued if both TAWS and GPWS systems have failed or are not available.

\# Only the portions of FIT Alerting based on flap position are disabled when FLAP OVR annunciation is displayed.

## TAWS-B ALERTS

| Alert Type | PFD/MFD TAWS-B Page Annunciation | MFD Pop-Up Alert | Aural Message |
|---|---|---|---|
| Excessive Descent Rate Warning (EDR) | PULL UP | PULL-UP | "Pull Up" |
| Reduced Required Terrain Clearance Warning (RTC) | PULL UP | TERRAIN - PULL-UP | "Terrain, Terrain; Pull Up, Pull Up" |
| Imminent Terrain Impact Warning (ITI) | PULL UP | TERRAIN - PULL-UP | "Terrain, Terrain; Pull Up, Pull Up" |
| Reduced Required Obstacle Clearance Warning (ROC) | PULL UP | OBSTACLE - PULL-UP | "Obstacle, Obstacle; Pull Up, Pull Up" |

| Alert Type | PFD/MFD TAWS-B Page Annunciation | MFD Pop-Up Alert | Aural Message |
|---|---|---|---|
| Imminent Obstacle Impact Warning (IOI) | PULL UP | OBSTACLE - PULL-UP | ""Obstacle, Obstacle; Pull Up, Pull Up" |
| Reduced Required Terrain Clearance Caution (RTC) | TERRAIN | CAUTION - TERRAIN | "Caution, Terrain; Caution, Terrain" |
| Imminent Terrain Impact Caution (ITI) | TERRAIN | CAUTION - TERRAIN | "Caution, Terrain; Caution, Terrain" |
| Reduced Required Obstacle Clearance Caution (ROC) | TERRAIN | CAUTION - OBSTACLE | "Caution, Obstacle; Caution, Obstacle" |
| Imminent Obstacle Impact Caution (IOI) | TERRAIN | CAUTION - OBSTACLE | "Caution, Obstacle; Caution, Obstacle" |
| Premature Descent Alert Caution (PDA) | TERRAIN | TOO LOW - TERRAIN | "Too Low, Terrain" |
| Altitude Callout "500" | None | None | "Five-Hundred" |
| Excessive Descent Rate Caution (EDR) | TERRAIN | SINK RATE | "Sink Rate" |
| Negative Climb Rate Caution (NCR) | TERRAIN | DON'T SINK | "Don't Sink" |

## TAWS-B System Status Annunciations

| Alert Type | PFD/MFD TAWS-A Page Annunciation | Additional TAWS-A Page Annunciation | Aural Message |
|---|---|---|---|
| System Test in Progress | TAWS TEST | TAWS TEST | None |
| System Test Pass | None | None | "TAWS System Test OK" |
| TAWS-B System Test Fail, Terrain or Obstacle database unavailable or invalid, invalid software configuration, system audio fault | TAWS FAIL | TAWS FAIL | "TAWS System Failure" |

| Alert Type | PFD/MFD TAWS-A Page Annunciation | Additional TAWS-A Page Annunciation | Aural Message |
|---|---|---|---|
| MFD Terrain or Obstacle database unavailable or invalid. TAWS operating with PFD Terrain or Obstacle databases | None | TERRAIN DATABASE FAILURE | None |
| No GPS position | TAWS N/A | NO GPS POSITION | "TAWS Not Available" |
| Excessively degraded GPS signal, Out of database coverage area | TAWS N/A | None | "TAWS Not Available" |
| Sufficient GPS signal received after loss | None | None | "TAWS Available" |

## TCAS II ALERTS AND ANNUNCIATIONS

| Mode | PFD Mode Annunciation | MFD Traffic Map Page Mode Annunciation | Traffic Display Status Icon (Other Maps) |
|---|---|---|---|
| TCAS II Self-test Initiated (TEST) | None | TEST ('TEST MODE' also shown in white on top center of page) | |
| Traffic Advisory and Resolution Advisory (TA/RA) | None | TA/RA | |
| Traffic Advisory Only (TA ONLY) | TA ONLY | TA ONLY | |
| TCAS II Standby (TFC STBY) | TCAS STBY<br>TCAS STBY* | STANDBY (also shown in white in center of page when aircraft on ground, yellow in air) | |
| TCAS II Failed | TCAS FAIL | FAIL | |

** Annunciation appears white when aircraft is on the ground and yellow while in the air.*

**TCAS II Modes**

| Traffic Map Page Annunciation | Description |
|---|---|
| NO DATA | Data is not being received from the TCAS II unit |
| DATA FAILED | Data is being received from the TCAS II unit, but the unit is self-reporting a failure |
| FAILED | Incorrect data format received from the TCAS II unit |

**TCAS II Failure Annunciations**

| Traffic Status Banner Annunciation | Description |
|---|---|
| RA OFF SCALE | A Resolution Advisory is outside the selected display range*. Annunciation is removed when traffic comes within the selected display range |
| TA OFF SCALE | A Traffic Advisory is outside the selected display range*. Annunciation is removed when traffic comes within the selected display range. |
| RA X.X ± XX ↕ | System cannot determine bearing of Resolution Advisory**. Annunciation indicates distance in nm, altitude separation in hundreds of feet, and altitude trend arrow (climbing/descending). |
| TA X.X ± XX ↕ | System cannot determine bearing of Traffic Advisory**. Annunciation indicates distance in nm, altitude separation in hundreds of feet, and altitude trend arrow (climbing/descending). |
| TRFC FAIL | TCAS II unit has failed (unit is self-reporting a failure or sending incorrectly formatted data) |
| NO TCAS DATA | Data is not being received from the TCAS II unit |

**Shown as symbol on Traffic Map Page*
***Shown in center of Traffic Map Page*

**TCAS II Traffic Status Annunciations**

## CPDLC ATC ALERT

The following PFD alert informs the flight crew of a received CPDLC message from ATC. When the message is received, the alert flashes five times, then stays illuminated until the required action is accomplished.

**CPDLC Alert on the PFD**

## OTHER PRODIGY® AURAL ALERTS

| Message | Priority | Description |
|---|---|---|
| "Autopilot" | Warning | Warning – Autopilot is disengaged<br>Single alert for manual AP disengagement<br>Continuous alert for automatic AP disengagement; cancelled with **AP DISC** Switch |
| "Cabin" | | High cabin altitude |
| "Fire, Fire" | | Engine fire |
| "Flight Director" | | Flight director has reverted to pitch or roll default mode |
| "High Speed" | | Maximum operating speed exceeded |
| "Landing Gear" | | Gear up in landing condition |
| "No Takeoff Brakes" | | No Takeoff Configuration due to brake status |
| "No Takeoff Flaps" | | No Takeoff Configuration due to flap status |
| "No Takeoff Spoilers" | | No Takeoff Configuration due to spoiler status |
| "No Takeoff Trim" | | No Takeoff Configuration due to trim status |
| "Rudder Overboost" | | SLRB (Spring Loaded Rudder Booster) uncommanded actuation |
| "Stall, Stall" | | Airplane in stall condition |
| "Altitude" | Advisory | Aircraft has deviated ±200 feet of the selected altitude |
| "Minimums, minimums" | | The aircraft has descended below the preset barometric minimum descent altitude. |
| "Traffic" | | The Traffic Information Service (TIS) has issued a Traffic Advisory alert. |

| Message | Priority | Description |
|---|---|---|
| "Trim Trim Trim" | Advisory | Trim switch malfunction |
| "Vertical track" | | The aircraft is one minute from Top of Descent. Issued only when vertical navigation is enabled. |
| "Aural Warning OK" | Status | Aural warning system test passes |
| "Aural Warning One Channel" | | Aural warning system test detects failure in one channel |
| "Incoming Call" | | Satellite telephone is receiving a call |
| "Message ATC" | | New Data Link message received from ATC |
| "SelCal" | | Incoming communication through the HF radio |
| "Takeoff OK" | | Takeoff configuration test passed |
| "Timer Expired" | | Countdown timer on the PFD has reached zero |
| "TIS not available" | | The aircraft is outside the Traffic Information Service (TIS) coverage area. |

## FLIGHT PLAN IMPORT/EXPORT MESSAGES

In some circumstances, some messages may appear in conjunction with others.

| Flight Plan Import/Export Results | Description |
|---|---|
| 'Flight plan successfully imported.' | A flight plan file stored on the SD card was successfully imported as a stored flight plan. |
| 'File contained user waypoints only. User waypoints imported successfully. No stored flight plan data was modified.' | The file stored on the SD card did not contain a flight plan, only user waypoints. These waypoints have been saved to the system user waypoints. No flight plans stored in the system have been modified. |
| 'No flight plan files found to import.' | The SD card contains no flight plan data. |
| 'Flight plan import failed.' | Flight plan data was not successfully imported from the SD card. |
| 'Flight plan partially imported.' | Some flight plan waypoints were successfully imported from the SD card, however others had errors and were not imported. A partial stored flight plan now exists in the system. |
| 'File contained user waypoints only.' | The file stored on the SD card did not contain a flight plan, only user waypoints. One or more of these waypoints did not import successfully. |
| 'Too many points. Flight plan truncated.' | The flight plan on the SD card contains more waypoints than the system can support. The flight plan was imported with as many waypoints as possible. |
| 'Some waypoints not loaded. Waypoints locked.' | The flight plan on the SD card contains one or more waypoints that the system cannot find in the navigation database. The flight plan has been imported, but must be edited within the system before it can be activated for use. |

| Flight Plan Import/Export Results | Description |
|---|---|
| 'User waypoint database full. Not all loaded.' | The flight plan file on the SD card contains user waypoints. The quantity of stored user waypoints has exceeded system capacity, therefore not all the user waypoints on the SD card have been imported. Any flight plan user waypoints that were not imported are locked in the flight plan. The flight plan must be edited within the system before it can be activated for use. |
| 'One or more user waypoints renamed.' | One or more imported user waypoints were renamed when imported due to naming conflicts with waypoints already existing in the system. |
| 'Flight plan successfully exported.' | The stored flight plan was successfully exported to the SD card. |
| 'Flight plan export failed.' | The stored flight plan was not successfully exported to the SD card. The SD card may not have sufficient available memory or the card may have been removed prematurely. |

## PILOT PROFILE IMPORT/EXPORT MESSAGES

| Pilot Profile Import/Export Results | Description |
|---|---|
| 'No pilot profile plan files found to import.' | Displayed if the SD card does not have one or more valid pilot profile filenames. |
| 'Overwrite existing profile?' | Displayed if the profile name matches the name of existing profile. |
| 'Profile name invalid. Enter a different profile name.' | Displayed if the profile name is invalid. |
| 'All available pilot profiles in use. Delete a profile before importing another.' | Displayed if the maximum number for pilot profiles has been reached. |
| 'Pilot profile import failed.' | Displayed if the importing operation fails for any other reason. |
| 'Pilot profile import succeeded.' | Displayed if the importing operation succeeds. |
| 'Overwrite existing file?' | Displayed if the filename matches the name of an existing file on the SD card. |
| 'Pilot profile export failed.' | Displayed if the export operation fails. |
| 'Pilot profile export succeeded.' | Displayed if the export operation succeeds. |

## MFD & PFD MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **DATA LOST** – Pilot stored data was lost. Recheck settings. | The pilot profile data was lost. System reverts to default pilot profile and settings. The pilot may reconfigure the MFD & PFDs with preferred settings, if desired. |
| **XTALK ERROR** – A flight display crosstalk error has occurred. | The MFD and PFDs are not communicating with each other. The system should be serviced. |
| **PFD1 SERVICE** – PFD1 needs service. Return unit for repair. | The PFD and/or MFD self-test has detected a problem. The system should be serviced. |
| **PFD2 SERVICE** – PFD2 needs service. Return unit for repair. | |
| **MFD1 SERVICE** – MFD1 needs service. Return unit for repair. | |
| **MANIFEST** – PFD1 software mismatch, communication halted. | The PFD and/or MFD has incorrect software installed. The system should be serviced. |
| **MANIFEST** – PFD2 software mismatch, communication halted. | |
| **MANIFEST** – MFD1 software mismatch, communication halted. | |
| **PFD1 CONFIG** – PFD1 config error. Config service req'd. | The PFD configuration settings do not match backup configuration memory. The system should be serviced. |
| **PFD2 CONFIG** – PFD2 config error. Config service req'd. | |
| **MFD1 CONFIG** – MFD1 config error. Config service req'd. | The MFD configuration settings do not match backup configuration memory. The system should be serviced. |
| **SW MISMATCH** – GDU software version mismatch. Xtalk is off. | The MFD and PFDs have different software versions installed. The system should be serviced. |

## MFD & PFD MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **PFD1 COOLING** – PFD1 has poor cooling. Reducing power usage. | The PFD and/or MFD is overheating and is reducing power consumption by dimming the display. If problem persists, the system should be serviced. |
| **PFD2 COOLING** – PFD2 has poor cooling. Reducing power usage. | |
| **MFD1 COOLING** – MFD1 has poor cooling. Reducing power usage. | |
| **PFD1 KEYSTK** – PFD1 [key name] Key is stuck. | A key is stuck on the PFD and/or MFD bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists. |
| **PFD2 KEYSTK** – PFD2 [key name] Key is stuck. | |
| **MFD1 KEYSTK** – MFD [key name] Key is stuck. | |
| **CNFG MODULE** – PFD1 configuration module is inoperative. | The PFD1 configuration module backup memory has failed. The system should be serviced. |
| **PFD1 VOLTAGE** – PFD1 has low voltage. Reducing power usage | The PFD1 voltage is low. The system should be serviced. |
| **PFD2 VOLTAGE** – PFD2 has low voltage. Reducing power usage | The PFD2 voltage is low. The system should be serviced. |
| **MFD1 VOLTAGE** – MFD1 has low voltage. Reducing power usage | The MFD voltage is low. The system should be serviced. |

## DATABASE MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **MFD1 DB ERR** – MFD1 navigation database error exists. | The MFD and/or PFD detected a failure in the navigation database. Attempt to reload the navigation database. If problem persists, the system should be serviced. |
| **PFD1 DB ERR** – PFD1 navigation database error exists. | |
| **PFD2 DB ERR** – PFD2 navigation database error exists. | |

## DATABASE MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **MFD1 DB ERR** – MFD1 basemap database error exists. | The MFD and/or PFD detected a failure in the basemap database. |
| **PFD1 DB ERR** – PFD1 basemap database error exists. | |
| **PFD2 DB ERR** – PFD2 basemap database error exists. | |
| **MFD1 DB ERR** – MFD1 terrain database error exists. | The MFD and/or PFD detected a failure in the terrain database. Ensure that the terrain card is properly inserted in display. Replace terrain card. If problem persists, the system should be serviced. |
| **PFD1 DB ERR** – PFD1 terrain database error exists. | |
| **PFD2 DB ERR** – PFD2 terrain database error exists. | |
| **MFD1 DB ERR** – MFD1 terrain database missing. | The terrain database is present on another LRU, but is missing on the specified LRU. |
| **PFD1 DB ERR** – PFD1 terrain database missing. | |
| **PFD2 DB ERR** – PFD2 terrain database missing. | |
| **MFD1 DB ERR** – MFD1 obstacle database error exists. | The MFD and/or PFD detected a failure in the obstacle database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced. |
| **PFD1 DB ERR** – PFD1 obstacle database error exists. | |
| **PFD2 DB ERR** – PFD2 obstacle database error exists. | |
| **MFD1 DB ERR** – MFD1 obstacle database missing. | The obstacle database is present on another LRU, but is missing on the specified LRU. |
| **PFD1 DB ERR** – PFD1 obstacle database missing. | |
| **PFD2 DB ERR** – PFD2 obstacle database missing. | |

## DATABASE MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **MFD1 DB ERR** – MFD1 airport terrain database error exists. | The MFD and/or PFD detected a failure in the airport terrain database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced. |
| **PFD1 DB ERR** – PFD1 airport terrain database error exists. | |
| **PFD2 DB ERR** – PFD2 airport terrain database error exists. | |
| **MFD1 DB ERR** – MFD1 airport terrain database missing. | The airport terrain database is present on another LRU, but is missing on the specified LRU. |
| **PFD1 DB ERR** – PFD1 airport terrain database missing. | |
| **PFD2 DB ERR** – PFD2 airport terrain database missing. | |
| **MFD1 DB ERR** – MFD1 Safe Taxi database error exists. | The MFD and/or PFD detected a failure in the SafeTaxi database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced. |
| **PFD1 DB ERR** – PFD1 Safe Taxi database error exists. | |
| **PFD2 DB ERR** – PFD2 Safe Taxi database error exists. | |
| **MFD1 DB ERR** – MFD1 Chartview database error exists. | The MFD detected a failure in the ChartView database (optional feature). Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced. |
| **MFD1 DB ERR** – MFD1 FliteCharts database error exists. | The MFD detected a failure in the FliteCharts database (optional feature). Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced. |
| **MFD1 DB ERR** – MFD1 Airport Directory database error exists. | The MFD detected a failure in the Airport Directory database. Ensure that the data card is properly inserted. Replace data card. If problem persists, the system should be serviced. |

## DATABASE MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **DB MISMATCH** – Navigation database mismatch. Xtalk is off. | The PFDs and MFD have different navigation database versions or types (Americas, European, etc.) installed. Crossfill is off. Install correct navigation database version or type in all displays. |
| **DB MISMATCH** – Standby Navigation database mismatch. | The PFDs and MFD have different standby navigation database versions or types (Americas, European, etc.) installed. Install correct standby navigation database version or type in all displays. |
| **DB MISMATCH** – Terrain database mismatch. | The PFDs and MFD have different terrain database versions or types installed. Install correct terrain database version or type in all displays. |
| **DB MISMATCH** – Obstacle database mismatch. | The PFDs and MFD have different obstacle database installed. Install correct obstacle database in all displays. |
| **DB MISMATCH** – Airport Terrain database mismatch. | The PFDs and MFD have different airport terrrain databases installed. Install correct airport terrain database in all displays. |
| **NAV DB UPDATED** – Active navigation database updated. | System has updated the active navigation database from the standby navigation database. |
| **TERRAIN DSP** – [PFD1, PFD2 or MFD1] Terrain awareness display unavailable. | One of the terrain, airport terrain, or obstacle databases required for TAWS in the specified PFD or MFD is missing or invalid. |

## GMA 1347D MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **GMA1 FAIL** – GMA1 is inoperative. | The audio panel self-test has detected a failure. The audio panel is unavailable. The system should be serviced. |
| **GMA2 FAIL** – GMA2 is inoperative. | |
| **GMA XTALK** – GMA crosstalk error has occurred. | An error has occurred in transferring data between the two GMAs. The system should be serviced. |

## GMA 1347D MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **GMA1 CONFIG** – GMA1 config error. Config service req'd. | The audio panel configuration settings do not match backup configuration memory. The system should be serviced. |
| **GMA2 CONFIG** – GMA2 config error. Config service req'd. | |
| **MANIFEST** – GMA1 software mismatch, communication halted. | The audio panel has incorrect software installed. The system should be serviced. |
| **MANIFEST** – GMA2 software mismatch, communication halted. | |
| **GMA1 SERVICE** – GMA1 needs service. Return unit for repair. | The audio panel self-test has detected a problem in the unit. Certain audio functions may still be available, and the audio panel may still be usable. The system should be serviced when possible. |
| **GMA2 SERVICE** – GMA2 needs service. Return unit for repair. | |

## GIA 63W MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **GIA1 CONFIG** – GIA1 config error. Config service req'd. | The GIA1 and/or GIA2 configuration settings do not match backup configuration memory. The system should be serviced. |
| **GIA2 CONFIG** – GIA2 config error. Config service req'd. | |
| **GIA1 CONFIG** – GIA1 audio config error. Config service req'd. | The GIA1 and/or GIA2 have an error in the audio configuration. The system should be serviced. |
| **GIA2 CONFIG** – GIA2 audio config error. Config service req'd. | |
| **GIA1 COOLING** – GIA1 temperature too low. | The GIA1 and/or GIA2 temperature is too low to operate correctly. Allow units to warm up to operating temperature. |
| **GIA2 COOLING** – GIA2 temperature too low. | |
| **GIA1 COOLING** – GIA1 over temperature. | The GIA1 and/or GIA2 temperature is too high. If problem persists, the system should be serviced. |
| **GIA2 COOLING** – GIA2 over temperature. | |

## GIA 63W MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **GIA1 SERVICE** – GIA1 needs service. Return the unit for repair. | The GIA1 and/or GIA2 self-test has detected a problem in the unit. The system should be serviced. |
| **GIA2 SERVICE** – GIA2 needs service. Return the unit for repair. | |
| **HW MISMATCH** – GIA hardware mismatch. GIA1 communication halted. | A GIA mismatch has been detected, where only one is SBAS capable. |
| **HW MISMATCH** – GIA hardware mismatch. GIA2 communication halted. | |
| **MANIFEST** – GIA1 software mismatch, communication halted. | The GIA1 and/or GIA 2 has incorrect software installed. The system should be serviced. |
| **MANIFEST** – GIA2 software mismatch, communication halted. | |
| **MANIFEST** – GFC software mismatch, communication halted. | Incorrect servo software is installed, or gain settings are incorrect. |
| **COM1 TEMP** – COM1 over temp. Reducing transmitter power. | The system has detected an over temperature condition in COM1 and/or COM2. The transmitter is operating at reduced power. If the problem persists, the system should be serviced. |
| **COM2 TEMP** – COM2 over temp. Reducing transmitter power. | |
| **COM1 SERVICE** – COM1 needs service. Return unit for repair. | The system has detected a failure in COM1 and/or COM2. COM1 and/or COM2 may still be usable. The system should be serviced when possible. |
| **COM2 SERVICE** – COM2 needs service. Return unit for repair. | |
| **COM1 PTT** – COM1 push-to-talk key is stuck. | The COM1 and/or COM2 external push-to-talk switch is stuck in the enable (or "pressed") position. Press the PTT switch again to cycle its operation. If the problem persists, the system should be serviced. |
| **COM2 PTT** – COM2 push-to-talk key is stuck. | |
| **COM1 RMT XFR** – COM1 remote transfer key is stuck. | The COM1 and/or COM2 transfer switch is stuck in the enabled (or "pressed") position. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced. |
| **COM2 RMT XFR** – COM2 remote transfer key is stuck. | |

## GIA 63W MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **LOI** – GPS integrity lost. Crosscheck with other NAVS. | GPS integrity is insufficient for the current phase of flight. |
| **GPS NAV LOST** – Loss of GPS navigation. Insufficient satellites. | Loss of GPS navigation due to insufficient satellites. |
| **GPS NAV LOST** – Loss of GPS navigation. Position error. | Loss of GPS navigation due to position error. |
| **GPS NAV LOST** – Loss of GPS navigation. GPS fail. | Loss of GPS navigation due to GPS failure. |
| **ABORT APR** – Loss of GPS navigation. Abort approach. | Abort approach due to loss of GPS navigation. |
| **APR DWNGRADE** – Approach downgraded. | Vertical guidance generated by SBAS is unavailable, use LNAV only minimums. |
| **TRUE APR** – True north approach. Change HDG reference to TRUE. | Displayed after passing the first waypoint of a true north approach when the nav angle is set to 'AUTO'. |
| **GPS1 SERVICE** – GPS1 needs service. Return unit for repair. | A failure has been detected in the GPS1 and/or GPS2 receiver. The receiver may still be available. The system should be serviced. |
| **GPS2 SERVICE** – GPS2 needs service. Return unit for repair. | |
| **NAV1 SERVICE** – NAV1 needs service. Return unit for repair. | A failure has been detected in the NAV1 and/or NAV2 receiver. The receiver may still be available. The system should be serviced. |
| **NAV2 SERVICE** – NAV2 needs service. Return unit for repair. | |
| **NAV1 RMT XFR** – NAV1 remote transfer key is stuck. | The remote NAV1 and/or NAV2 transfer switch is stuck in the enabled (or "pressed") state. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced. |
| **NAV2 RMT XFR** – NAV2 remote transfer key is stuck. | |
| **G/S1 FAIL** – G/S1 is inoperative. | A failure has been detected in glideslope receiver 1 and/or receiver 2. The system should be serviced. |
| **G/S2 FAIL** – G/S2 is inoperative. | |

## GIA 63W MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **G/S1 SERVICE** – G/S1 needs service. Return unit for repair. | A failure has been detected in glideslope receiver 1 and/or receiver 2. The receiver may still be available. The system should be serviced when possible. |
| **G/S2 SERVICE** – G/S2 needs service. Return unit for repair. | |

## GSD 41 MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **GSD1 CONFIG** – GSD1 config error. Config service req'd. | GSD1 and the CDU have different copies of the GSD1 configuration. |
| **GSD1 COOLING** – GSD1 temperature too low. | GSD1 is reporting a low temperature condition. |
| **GSD1 COOLING** – GSD1 over temperature. | GSD1 is reporting an over-temperature condition. |
| **GSD1 SERVICE** – GSD1 needs service. Return unit for repair. | GSD1 is reporting an internal error condition. The GSD may still be usable. |
| **MANIFEST** – GSD1 software mismatch. Communication halted. | GSD1 has incorrect software installed. The system should be serviced. |

## GEA 71 MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **GEA1 CONFIG** – GEA1 config error. Config service req'd. | The GEA1 configuration settings do not match those of backup configuration memory. The system should be serviced. |
| **GEA2 CONFIG** – GEA2 config error. Config service req'd. | The GEA2 configuration settings do not match those of backup configuration memory. The system should be serviced. |
| **GEA3 CONFIG** – GEA3 config error. Config service req'd. | The GEA3 configuration settings do not match those of backup configuration memory. The system should be serviced. |
| **MANIFEST** – GEA1 software mismatch, communication halted. | The #1 GEA 71 has incorrect software installed. The system should be serviced. |

## GEA 71 MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **MANIFEST** – GEA2 software mismatch, communication halted. | The #2 GEA 71 has incorrect software installed. The system should be serviced. |
| **MANIFEST** – GEA3 software mismatch, communication halted. | The #3 GEA 71 has incorrect software installed. The system should be serviced. |

## GTX 33 MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **XPDR1 CONFIG** – XPDR1 config error. Config service req'd. | The transponder configuration settings do not match those of backup configuration memory. The system should be serviced. |
| **XPDR2 CONFIG** – XPDR2 config error. Config service req'd. | The transponder configuration settings do not match those of backup configuration memory. The system should be serviced. |
| **MANIFEST** – GTX1 software mismatch, communication halted. | The transponder has incorrect software installed. The system should be serviced. |
| **MANIFEST** – GTX2 software mismatch, communication halted. | The transponder has incorrect software installed. The system should be serviced. |
| **XPDR1 SRVC** – XPDR1 needs service. Return unit for repair. | The #1 transponder should be serviced when possible. |
| **XPDR2 SRVC** – XPDR2 needs service. Return unit for repair. | The #2 transponder should be serviced when possible. |
| **XPDR1 FAIL** – XPDR1 is inoperative. | There is no communication with the #1 transponder. |
| **XPDR2 FAIL** – XPDR2 is inoperative. | There is no communication with the #2 transponder. |

## GRS 77 MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **AHRS1 TAS** – AHRS1 not receiving valid airspeed. | The #1 AHRS is not receiving true airspeed from the air data computer. The AHRS relies on GPS information to augment the lack of airspeed. The system should be serviced. |
| **AHRS2 TAS** – AHRS2 not receiving valid airspeed. | The #2 AHRS is not receiving true airspeed from the air data computer. The AHRS relies on GPS information to augment the lack of airspeed. The system should be serviced. |
| **AHRS1 GPS** – AHRS1 using backup GPS source. | The #1 AHRS is using the backup GPS path. Primary GPS path has failed. The system should be serviced when possible. |
| **AHRS2 GPS** – AHRS2 using backup GPS source. | The #2 AHRS is using the backup GPS path. Primary GPS path has failed. The system should be serviced when possible. |
| **AHRS1 GPS** – AHRS1 not receiving any GPS information. | The #1 AHRS is not receiving any or any useful GPS information. Check AFMS limitations. The system should be serviced. |
| **AHRS2 GPS** – AHRS2 not receiving any GPS information. | The #2 AHRS is not receiving any or any useful GPS information. Check AFMS limitations. The system should be serviced. |
| **AHRS1 GPS** – AHRS1 not receiving backup GPS information. | The #1 AHRS is not receiving backup GPS information. The system should be serviced. |
| **AHRS2 GPS** – AHRS2 not receiving backup GPS information. | The #2 AHRS is not receiving backup GPS information. The system should be serviced. |
| **AHRS1 GPS** – AHRS1 operating exclusively in no-GPS mode. | The #1 AHRS is operating exclusively in no-GPS mode. The system should be serviced. |
| **AHRS2 GPS** – AHRS2 operating exclusively in no-GPS mode. | The #2 AHRS is operating exclusively in no-GPS mode. The system should be serviced. |
| **AHRS MAG DB** – AHRS magnetic model database version mismatch. | The #1 AHRS and #2 AHRS magnetic model database versions do not match. |
| **AHRS1 SRVC** – AHRS1 Magnetic-field model needs update. | The #1 AHRS earth magnetic field model is out of date. Update magnetic field model when practical. |

## GRS 77 MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **AHRS2 SRVC** – AHRS2 Magnetic-field model needs update. | The #2 AHRS earth magnetic field model is out of date. Update magnetic field model when practical. |
| **GEO LIMITS** – AHRS1 too far North/South, no magnetic compass. | The aircraft is outside geographical limits for approved AHRS operation. Heading is flagged as invalid. |
| **GEO LIMITS** – AHRS2 too far North/South, no magnetic compass. | |
| **MANIFEST** – GRS1 software mismatch, communication halted. | The #1 AHRS has incorrect software installed. The system should be serviced. |
| **MANIFEST** – GRS2 software mismatch, communication halted. | The #2 AHRS has incorrect software installed. The system should be serviced. |

## GMU 44 MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **HDG FAULT** – AHRS1 magnetometer fault has occurred. | A fault has occurred in the #1 GMU 44. Heading is flagged as invalid. The AHRS uses GPS for backup mode operation. The system should be serviced. |
| **HDG FAULT** – AHRS2 magnetometer fault has occurred. | A fault has occurred in the #2 GMU 44. Heading is flagged as invalid. The AHRS uses GPS for backup mode operation. The system should be serviced. |
| **MANIFEST** – GMU1 software mismatch, communication halted. | The GMU 44 has incorrect software installed. The system should be serviced. |
| **MANIFEST** – GMU2 software mismatch, communication halted. | |

## GSR 56 MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **GSR1 FAIL** – GSR1 has failed. | A failure has been detected in the #1 GSR 56. The system should be serviced. |
| **GSR2 FAIL** – GSR2 has failed. | A failure has been detected in the #2 GSR 56. The system should be serviced. |
| **REGISTER CONNEXT** – Data services are inoperative, register w/ Connext. | The GDL 59 is not registered with Garmin Connext, or its current registration data has failed authentication. |

## GDL 59 MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **GDL59 CONFIG** – GDL 59 config error. Config service req'd. | GDL 59 configuration settings do not match those of backup configuration memory. The system should be serviced. |
| **GDL59 FAIL** – GDL 59 has failed. | A failure has been detected in the GDL 59. The receiver is unavailable. The system should be serviced. |
| **GDL59 SERVICE** – GDL 59 needs service. Return unit for repair. | A failure has been detected in the GDL 59. The system should be serviced. |
| **GDL59 RTR FAIL** – The GDL 59 router has failed. | A failure has been detected in the GDL 59 router. The system should be serviced. |
| **MANIFEST** – GDL software mismatch, communication halted. | The GDL 59 has incorrect software installed. The system should be serviced. |

## GDL 69A MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **GDL69 CONFIG** – GDL 69 config error. Config service req'd. | GDL 69 configuration settings do not match those of backup configuration memory. The system should be serviced. |
| **GDL69 FAIL** – GDL 69 has failed. | A failure has been detected in the GDL 69. The receiver is unavailable. The system should be serviced |
| **MANIFEST** – GDL software mismatch, communication halted. | The GDL 69 has incorrect software installed. The system should be serviced. |

## GDR 66 MESSAGE ADVISORIES

| System Message | Comments |
|---|---|
| **CPDLC** – CPDLC facility logon failed. | Logon failed. Check pertinent entries for accuracy. |
| **CPDLC** – CPDLC session terminated. | The currently active CPDLC session has been terminated. |
| **GDR TEMP** – GDR over temp. Reducing transmitter power. | The system has detected an over temperature condition in the GDR. The transmitter operates at reduced power. If the problem persists, the system should be serviced. |
| **GDR FAIL** – GDR is inoperative. | A failure has been detected in the GDR. The system should be serviced. |
| **GDR TX FAIL** – GDR transmitter is inoperative. | The system should be serviced. |
| **GDR PTT** – GDR push-to-talk key is stuck. | The GDR push-to-talk switch is stuck in the enable (or "pressed") position. Press the PTT switch again to cycle its operation. If the problem persists, the system should be serviced. |
| **GDR RMT XFR** – GDR remote transfer key is stuck. | The GDR transfer switch is stuck in the enabled (or "pressed") position. Press the transfer switch again to cycle its operation. If the problem persists, the system should be serviced. |
| **GDR SERVICE** – GDR needs service. Return unit for repair. | The GDR should be serviced when possible. |

## GDR 66 MESSAGE ADVISORIES (CONT.)

| System Message | Comments |
|---|---|
| **GDR CONFIG** – GDR config error. Config service req'd. | GDR configuration settings do not match those of backup configuration memory. The system should be serviced. |
| **GDR MANIFEST** – GDR software mismatch, communication halted. | The GDR has incorrect software installed. The system should be serviced. |
| **GDR AUX MANIFEST** – GDR AUX software mismatch, communication halted. | The GDR secondary processor has incorrect software installed. The system should be serviced. |

## GWX 68 ALERT MESSAGES

| Message | Comments |
|---|---|
| **GWX CONFIG** – GWX config error. Config service req'd. | GWX 68 configuration settings do not match those of the GDU configuration. The system should be serviced. |
| **GWX FAIL** – GWX is inoperative. | The GDU is not recieving status packet from the GWX 68 or the GWX 68 is reporting a fault. The GWX 68 radar system should be serviced. |
| **GWX SERVICE** – GWX needs service. Return unit for repair. | A failure has been detected in the GWX 68. The GWX 68 may still be usable. |
| **MANIFEST** – GWX software mismatch, communication halted. | The GWX 68 has incorrect software installed. The system should be serviced. |
| **WX ALERT** – Possible severe weather ahead. | Possible severe weather detected within +/- 10 degrees of the aircraft heading at a range of 80 to 320 nm. |

## GCU 477 MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **GCU CNFG** – GCU Config error. Config service req'd. | GCU 477 configuration settings do not match those of backup configuration memory. The system should be serviced. |
| **GCU FAIL** – GCU is inoperative. | A failure has been detected in the GCU 477. The GCU 477 is unavailable. |
| **MANIFEST** – GCU software mismatch, communication halted. | The GCU 477 has incorrect software installed. The system should be serviced. |
| **GCU KEYSTK** – GCU [key name] Key is stuck. | A key is stuck on the GCU 477 bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists. |

## GMC 715 MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **GMC CONFIG** – GMC Config error. Config service req'd. | GMC 715 configuration settings do not match those of backup configuration memory. The system should be serviced. |
| **GMC FAIL** – GMC is inoperative. | A failure has been detected in the GMC 715. The GMC 715 is unavailable. |
| **MANIFEST** – GMC software mismatch. Communication halted. | The GMC 715 has incorrect software installed. The system should be serviced. |
| **GMC KEYSTK** – GMC [key name] Key is stuck. | A key is stuck on the GMC 715 bezel. Attempt to free the stuck key by pressing it several times. The system should be serviced if the problem persists. |

## MISCELLANEOUS MESSAGE ADVISORIES

| Message | Comments |
|---|---|
| **FPL WPT LOCK** – Flight plan waypoint is locked. | Upon power-up, the system detects that a stored flight plan waypoint is locked. This occurs when an navigation database update eliminates an obsolete waypoint. The flight plan cannot find the specified waypoint and flags this message. This can also occur with user waypoints in a flight plan that is deleted.<br>Remove the waypoint from the flight plan if it no longer exists in any database,<br>Or<br>update the waypoint name/identifier to reflect the new information. |
| **FPL WPT MOVE** – Flight plan waypoint moved. | The system has detected that a waypoint coordinate has changed due to a new navigation database update. Verify that stored flight plans contain correct waypoint locations. |
| **TIMER EXPIRD** – Timer has expired. | The system notifies the pilot that the timer has expired. |
| **DB CHANGE** – Database changed. Verify user modified procedures. | This occurs when a stored flight plan contains procedures that have been manually edited. This alert is issued only after an navigation database update. Verify that the user-modified procedures in stored flight plans are correct and up to date. |
| **DB CHANGE** – Database changed. Verify stored airways. | This occurs when a stored flight plan contains an airway that is no longer consistent with the navigation database. This alert is issued only after an navigation database update. Verify use of airways in stored flight plans and reload airways as needed. |
| **FPL TRUNC** – Flight plan has been truncated. | This occurs when a newly installed navigation database eliminates an obsolete approach or arrival used by a stored flight plan. The obsolete procedure is removed from the flight plan. Update flight plan with current arrival or approach. |

## MISCELLANEOUS MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **LOCKED FPL** – Cannot navigate locked flight plan. | This occurs when the pilot attempts to activate a stored flight plan that contains locked waypoint. Remove locked waypoint from flight plan. Update flight plan with current waypoint. |
| **WPT ARRIVAL** – Arriving at waypoint -[xxxx] | Arriving at waypoint [xxxx], where [xxxx] is the waypoint name. |
| **STEEP TURN** – Steep turn ahead. | A steep turn is 15 seconds ahead. Prepare to turn. |
| **INSIDE ARSPC** – Inside airspace. | The aircraft is inside the airspace. |
| **ARSPC AHEAD** – Airspace ahead less than 10 minutes. | Special use airspace is ahead of aircraft. The aircraft will penetrate the airspace within 10 minutes. |
| **ARSPC NEAR** – Airspace near and ahead. | Special use airspace is near and ahead of the aircraft position. |
| **ARSPC NEAR** – Airspace near – less than 2 nm. | Special use airspace is within 2 nm of the aircraft position. |
| **APR INACTV** – Approach is not active. | The system notifies the pilot that the loaded approach is not active. Activate approach when required. |
| **SLCT FREQ** – Select appropriate frequency for approach. | The system notifies the pilot to load the approach frequency for the appropriate NAV receiver. Select the correct frequency for the approach. |
| **SLCT NAV** – Select NAV on CDI for approach. | The system notifies the pilot to set the CDI to the correct NAV receiver. Set the CDI to the correct NAV receiver. |
| **PTK FAIL** – Parallel track unavailable: bad geometry. | Bad parallel track geometry. |
| **PTK FAIL** – Parallel track unavailable: invalid leg type. | Invalid leg type for parallel offset. |
| **PTK FAIL** – Parallel track unavailable: past IAF. | IAF waypoint for parallel offset has been passed. |

## MISCELLANEOUS MESSAGE ADVISORIES (CONT.)

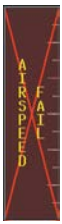
| Message | Comments |
|---|---|
| **UNABLE V WPT** – Can't reach current vertical waypoint. | The current vertical waypoint can not be reached within the maximum flight path angle and vertical speed constraints. The system automatically transitions to the next vertical waypoint. |
| **VNV** – Unavailable. Unsupported leg type in flight plan. | The lateral flight plan contains a procedure turn, vector, or other unsupported leg type prior to the active vertical waypoint. This prevents vertical guidance to the active vertical waypoint. |
| **VNV** – Unavailable. Excessive track angle error. | The current track angle error exceeds the limit, causing the vertical deviation to go invalid. |
| **VNV** – Unavailable. Excessive crosstrack error. | The current crosstrack exceeds the limit, causing vertical deviation to go invalid. |
| **VNV** – Unavailable. Parallel course selected. | A parallel course has been selected, causing the vertical deviation to go invalid. |
| **NON WGS84 WPT** – Do not use GPS navigation to [xxxx]. | The position of the selected waypoint [xxxx] is not calculated based on the WGS84 map reference datum and may be positioned in error as displayed. Do not use GPS to navigate to the selected non-WGS84 waypoint. |
| **TRAFFIC FAIL** – Traffic device has failed. | The system is no longer receiving data from the traffic system. The traffic device should be serviced. |
| **FAILED PATH** – A data path has failed. | A data path connected to the GDU, GSD 41, GDL 69A, or the GIA 63/W has failed. |
| **MAG VAR WARN** – Large magnetic variance. Verify all course angles. | The GDU's internal model cannot determine the exact magnetic variance for geographic locations near the magnetic poles. Displayed magnetic course angles may differ from the actual magnetic heading by more than 2°. |
| **SVT** – SVT DISABLED: Out of available terrain region. | Synthetic Vision is disabled because the aircraft is not within the boundaries of the installed terrain database. |

## MISCELLANEOUS MESSAGE ADVISORIES (CONT.)

| Message | Comments |
|---|---|
| **SVT** – SVT DISABLED: Terrain DB resolution too low. | Synthetic Vision is disabled because a terrain database of sufficient resolution (9 arc-second or better) is not currently installed. |
| **SCHEDULER [#]** – <message>. | Message criteria entered by the user. |
| **CHECK CRS** – Database course for LOC1 / [LOC ID] is [CRS]°. | Selected course for LOC1 differs from published localizer course by more than 10 degrees. |
| **CHECK CRS** – Database course for LOC2 / [LOC ID] is [CRS]°. | Selected course for LOC2 differs from published localizer course by more than 10 degrees. |
| **[PFD1, PFD2, or MFD1] CARD 1 REM** – Card 1 was removed. Reinsert card. | The SD card was removed from the top card slot of the specified PFD or MFD. The SD card needs to be reinserted. |
| **[PFD1, PFD2, or MFD1] CARD 2 REM** – Card 2 was removed. Reinsert card. | The SD card was removed from the bottom card slot of the specified PFD or MFD. The SD card needs to be reinserted. |
| **[PFD1, PFD2, or MFD1] CARD 1 ERR** – Card 1 is invalid. | The SD card in the top card slot of the specified PFD or MFD contains invalid data. |
| **[PFD1, PFD2, or MFD1] CARD 2 ERR** – Card 2 is invalid. | The SD card in the bottom card slot of the specified PFD or MFD contains invalid data. |

## OTHER SYSTEM ANNUNCIATIONS

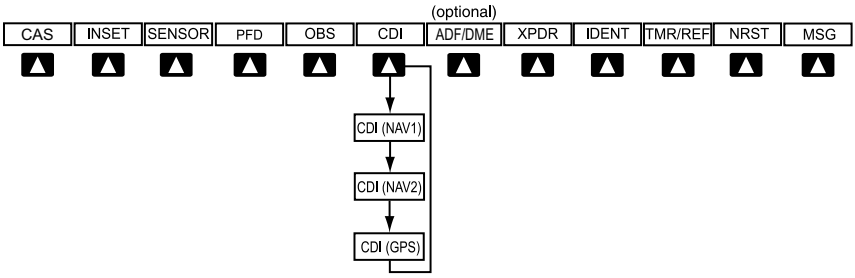
| System Annunciation | Comment |
|---|---|
| | Attitude and Heading Reference System is aligning. |
| | Display system is not receiving attitude information from the AHRS. |

| System Annunciation | Comment |
|---|---|
| | Indicates a configuration module failure. |
|  | Display system is not receiving airspeed input from air data computer. |
| | Display system is not receiving valid heading input from AHRS. |
| | System is not receiving valid heading input from GMU, but is receiving GPS-derived track information. |
| | Display system is not receiving altitude input from the air data computer. |
| | Display system is not receiving vertical speed input from the air data computer. |
| | Display system is not receiving valid transponder information. |

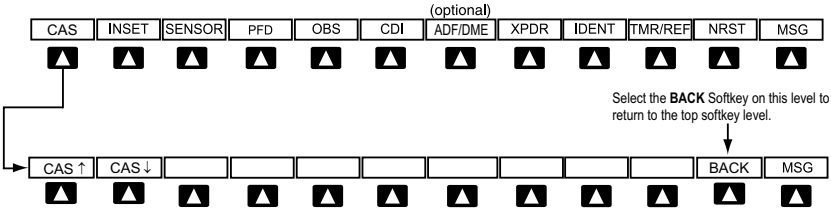
| System Annunciation | Comment |
|---|---|
| | CDI is not receiving valid data from the corresponding GIA. Does not apply when the CDI is set to GPS. |
| | GPS information is either not present or is invalid for navigation use.<br>Note that AHRS utilizes GPS inputs during normal operation. AHRS operation may be degraded if GPS signals are not present (see AFM). |
| Other Various Red X Indications | A red "X" through any other display field (such as engine instrumentation display) indicates that the field is not receiving valid data. |

# APPENDIX

## PFD SOFTKEY MAP

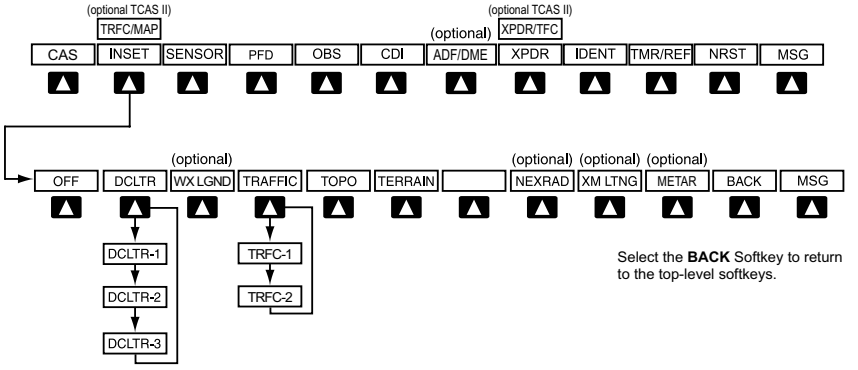



Top Level PFD Softkeys




CAS Softkeys

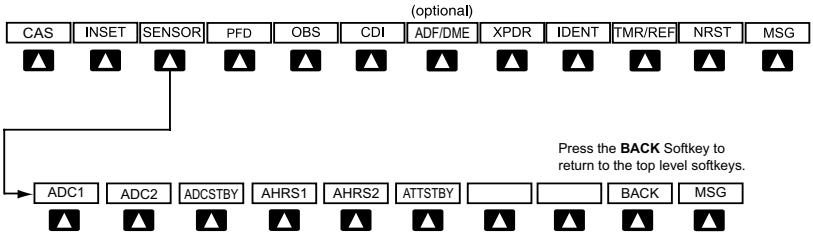
| | | |
|---|---|---|
| **CAS** | | Displays the scroll up and scroll down softkeys. |
| | **CAS ↑** | Scroll up (Displayed only when a sufficient number of items are displayed in the Crew Alerting System Display to warrant scrolling) |
| | **CAS ↓** | Scroll down (Displayed only when a sufficient number of items are displayed in the Crew Alerting System Display to warrant scrolling) |




## INSET Map Softkeys

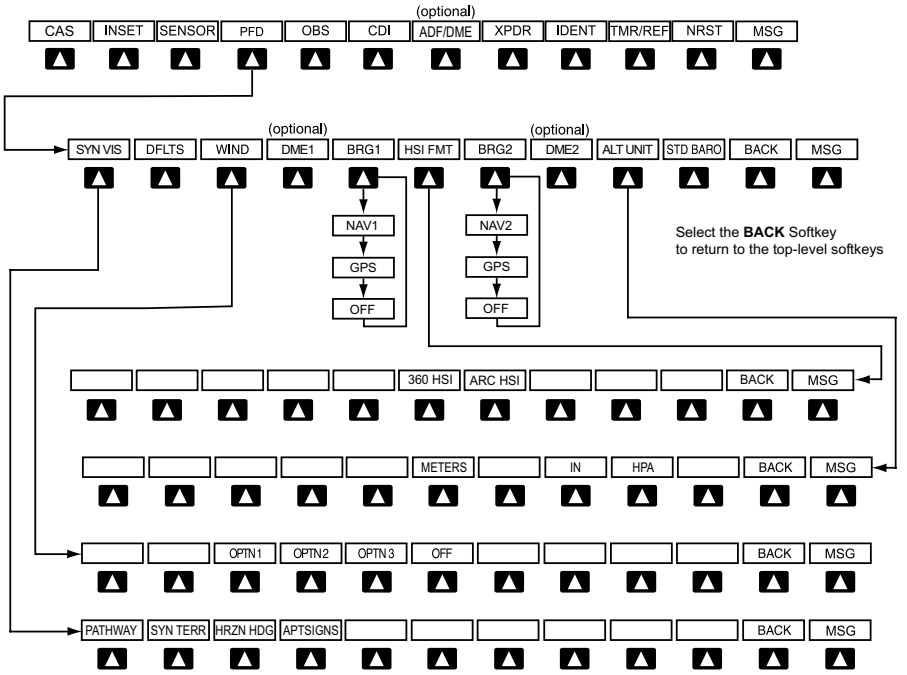
| | | |
|---|---|---|
| **INSET or TRFC/MAP** | | Pressing the **INSET** Softkey Displays Inset Map in the PFD lower left corner. The **TRFC/MAP** Softkey is displayed when the TCAS II option is installed. Pressing the **TRFC/MAP** Softkey displays the Inset Map showing Traffic Map Page. |
| | **OFF** | Removes Inset Map |
| | **DCLTR (3)** | Selects desired amount of map detail; cycles through declutter levels:<br>DCLTR (No Declutter): All map features visible<br>DCLTR-1: Declutters land data<br>DCLTR-2: Declutters land and SUA data<br>DCLTR-3: Removes everything except the active flight plan |
| | **WX LGND** | Displays icon and age on the Inset Map for the selected weather products (optional) |
| | **TRAFFIC** | Cycles through traffic display options:<br>TRFC-1: Traffic displayed on inset map<br>TRFC-2: Traffic Map Page is displayed in the inset map window |
| | **TOPO** | Displays topographical data (e.g., coastlines, terrain, rivers, lakes) and elevation scale on Inset Map |
| | **TERRAIN** | Displays terrain information on Inset Map (not available with TAWS-A) |

| | | |
|---|---|---|
| | **NEXRAD** | Displays NEXRAD weather and coverage information on Inset Map (optional feature) |
| | **XM LTNG** | Displays SiriusXM Weather lightning information on Inset Map (optional feature) |
| | **METAR** | Displays METAR flags on airport symbols shown on the Inset Map |




**SENSOR Softkeys**

| | | |
|---|---|---|
| **SENSOR** | | Displays softkeys for selecting the #1 and #2 AHRS and Air Data Computers |
| | **ADC1** | Selects the #1 Air Data Computer |
| | **ADC2** | Selects the #2 Air Data Computer |
| | **ADCSTBY** | Selects standby air data input |
| | **AHRS1** | Selects the #1 AHRS |
| | **AHRS2** | Selects the #2 AHRS |
| | **ATTSTBY** | Selects standby AHRS input |

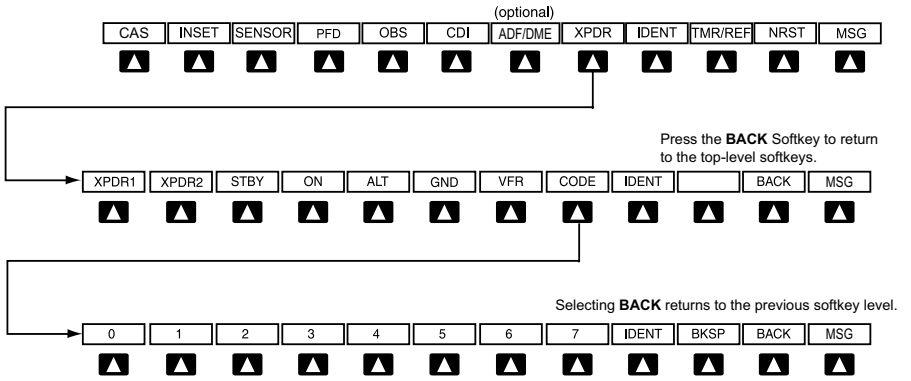



**PFD Configuration Softkeys**

| | | | |
|---|---|---|---|
| **PFD** | | | Displays second-level softkeys for additional PFD configurations |
| | **SYN VIS** | | Displays the softkeys for enabling or disabling Synthetic Vision features |
| | | **PATHWAY** | Displays rectangular boxes representing the horizontal and vertical flight path of the active flight plan |
| | | **SYN TERR** | Enables synthetic terrain depiction |
| | | **HRZN HDG** | Displays compass heading along the Zero-Pitch line |
| | | **APTSIGNS** | Displays position markers for airports within approximately 15 nm of the current aircraft position. Airport identifiers are displayed when the airport is within approximately 9 nm. |

| | | | |
|---|---|---|---|
| | **DFLTS** | | Resets PFD to default settings, including changing units to standard |
| | **WIND** | | Displays softkeys to select wind data parameters |
| | | **OPTN 1** | Headwind/tailwind and crosswind arrows with numeric speed components |
| | | **OPTN 2** | Wind direction arrow with numeric speed |
| | | **OPTN 3** | Wind direction arrow with headwind/tailwind and crosswind speed components |
| | | **OFF** | Information not displayed |
| | **DME1** | | Select to display the DME1 information window |
| | **BRG1** | | Cycles the Bearing 1 Information Window through NAV1 or GPS/waypoint identifier and GPS-derived distance information. |
| | **HSI FRMT** | | Displays the HSI formatting softkeys |
| | | **360 HSI** | Displays the HSI in a 360 degree format |
| | | **ARC HSI** | Displays the HSI in an arc format |
| | **BRG2** | | Cycles the Bearing 2 Information Window through NAV2 or GPS/waypoint identifier and GPS-derived distance information. |
| | **DME2** | | Select to display the DME2 information window |
| | **ALT UNIT** | | Displays softkeys for setting the altimeter and BARO settings to metric units |
| | | **METERS** | When enabled, displays altimeter and selected altitude in meters |
| | | **IN** | Press to display the BARO setting as inches of mercury |
| | | **HPA** | Press to display the BARO setting as hectopacals |

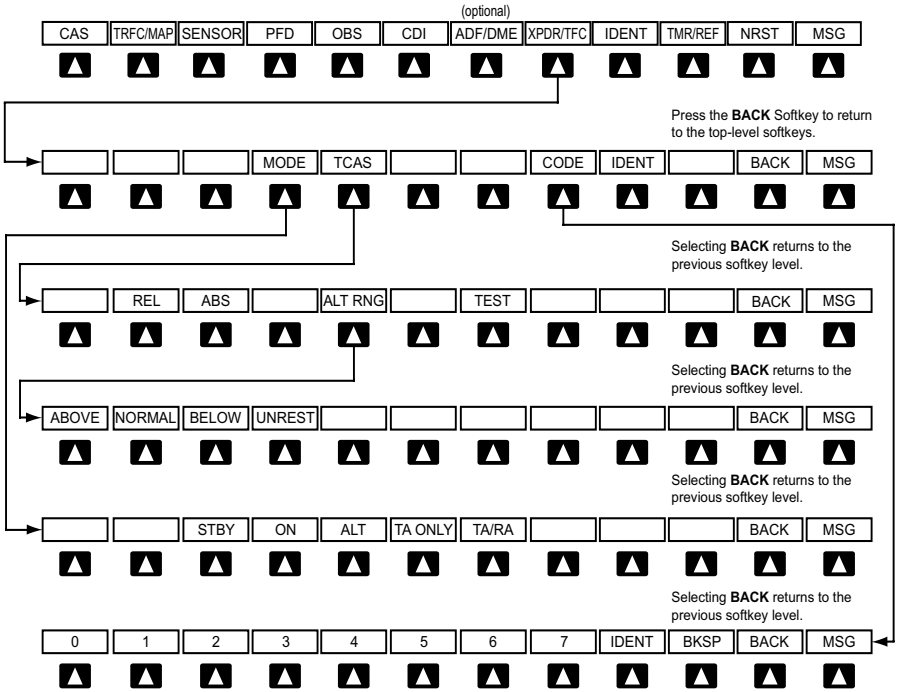
| | | | |
|---|---|---|---|
| | **STD BARO** | | Sets barometric pressure to 29.92 in Hg (1013 hPa) |
| **OBS** | | | Selects OBS mode on the CDI when navigating by GPS (only available with active leg) |
| **CDI** | | | Cycles through GPS, VOR1 (LOC1), and VOR2 (LOC2) navigation sources on the CDI |
| **ADF/DME** | | | Displays the ADF/DME Tuning Window, providing ADF tuning capability and allowing selection of the NAV source for tuning each DME |




**Transponder Softkeys**

| | | | |
|---|---|---|---|
| **XPDR** | | | Displays transponder mode selection softkeys |
| | **XPDR1** | | Selects the #1 transponder as active. Not available with TCAS II option. |
| | **XPDR2** | | Selects the #2 transponder as active. Not available with TCAS II option. |
| | **STBY** | | Selects Standby Mode (transponder does not reply to any interrogations) |
| | **ON** | | Selects Mode A (transponder replies to identification interrogations) |

| | | | |
|---|---|---|---|
| | **ALT** | | Selects Mode C – Altitude Reporting Mode (transponder replies to identification and altitude interrogations) |
| | **GND** | | Manually selects Ground Mode, the transponder does not allow Mode A and Mode C replies, but it does permit acquisition squitter and replies to discretely addressed Mode S interrogations. Not available with TCAS II option. |
| | **VFR** | | Automatically enters the VFR code (1200 in the U.S.A. only). Not available when TCAS II option is installed. |
| | **CODE** | | Displays transponder code selection soft-keys 0-7 |
| | | **0 — 7** | Use numbers to enter code |
| | | **BKSP** | Removes numbers entered, one at a time |
| **IDENT** | | | Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen |
| **TMR/REF** | | | Displays Timer/References Window |
| **NRST** | | | Displays Nearest Airports Window |
| **MSG** | | | Displays Messages Window |



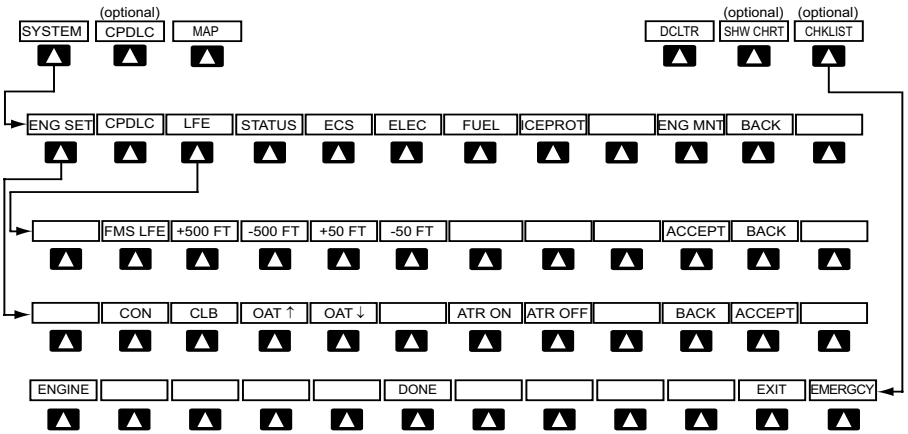

**Transponder/Traffic Softkeys with TCAS II Option**

| | | | | |
|---|---|---|---|---|
| **XPDR/TFC** | | | | Displays the transponder and TCAS II selection softkeys |
| | **MODE** | | | Displays transponder mode selection softkeys |
| | | **STBY** | | Selects transponder Standby Mode (transponder does not reply to any interrogations). When the transponder is set to standby, the TCAS II system is also set to standby. |
| | | **ON** | | Activates transponder (transponder replies to identification interrogations). When the transponder is set to ON, the TCAS II system is set to standby. |

| | | | | |
|---|---|---|---|---|
| | | **ALT** | | Altitude Reporting Mode (transponder replies to identification and altitude interrogations). When the transponder is set to ALT, the TCAS II system is set to standby. |
| | | **TA ONLY** | | Activates the TCAS II system in TA Only Mode and set the transponder to ALT |
| | | **TA/RA** | | Activates the TCAS II system in TA/RA Mode and sets the transponder to ALT |
| | | **BACK** | | Returns to the previous softkey level |
| | **TCAS** | | | Displays the TCAS control softkeys |
| | | **REL** | | Displays intruder altitude as altitude relative to own aircraft altitude |
| | | **ABS** | | Displays intruder MSL altitude |
| | | **ALT RNG** | | Displays the altitude display range softkeys |
| | | | **ABOVE** | Displays non-threat traffic from 9900 feet above the aircraft to 2700 feet below the aircraft. Typically used during climb phase of flight. |
| | | | **NORMAL** | Displays non-threat traffic from 2700 feet above the aircraft to 2700 feet below the aircraft. Typically used during enroute phase of flight. |

| | | | | |
|---|---|---|---|---|
| | | | **BELOW** | Displays non-threat traffic from 2700 feet above the aircraft to 9900 feet below the aircraft. Typically used during descent phase of flight. |
| | | | **UNREST** | All traffic is displayed |
| | | **TEST** | | Activates Test Mode and displays test intruder symbols |
| | | **BACK** | | Returns to the previous softkey level |
| | **CODE** | | | Displays transponder code selection softkeys 0-7 |
| | | **0 — 7** | | Use numbers to enter code |
| | | **IDENT** | | Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen |
| | | **BKSP** | | Removes numbers entered, one at a time |
| **IDENT** | | | | Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen |
| **TMR/REF** | | | | Displays Timer/References Window |
| **NRST** | | | | Displays Nearest Airports Window |
| **MSG** | | | | Displays Messages Window |

## MFD SOFTKEY MAP

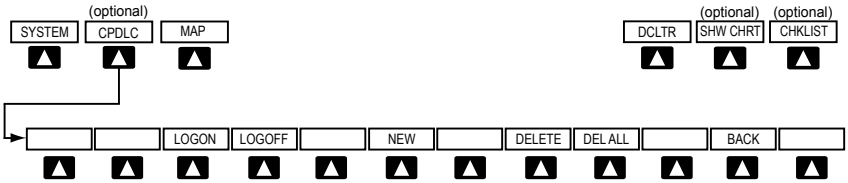



The **DONE** Softkey label changes to **UNDO** when the checklist item is already checked.

### SYSTEM Softkeys

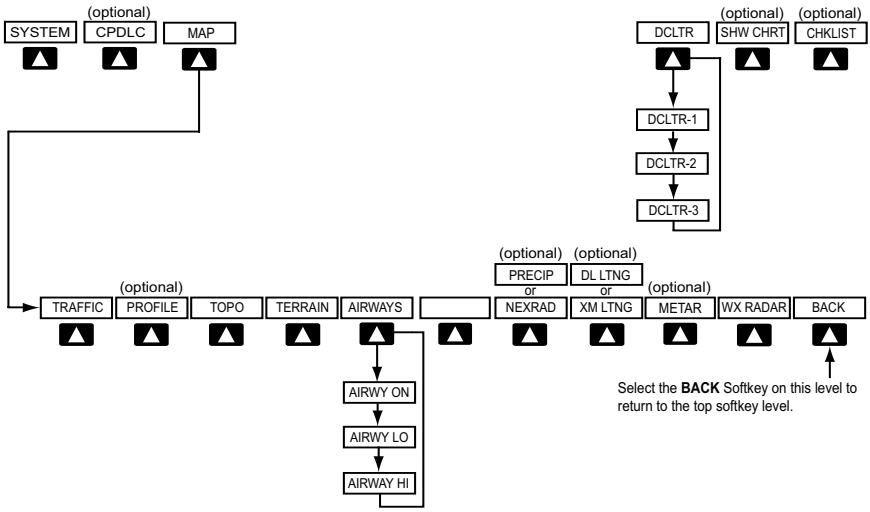
| | | | |
|---|---|---|---|
| **SYSTEM** | | | Accesses engine and airframe softkeys |
| | **ENG SET** | | Accesses the FADEC settings softkeys; displays the Takeoff Data Set Window when aircraft is parked or taxiing |
| | | **CON** | Selects the continuous thrust rating. Disabled when aircraft is on the ground. |
| | | **CLB** | Selects the maximum climb thrust rating. Disabled when aircraft is on the ground. |
| | | **OAT ↑** | Increases the takeoff outside air temperature setting in one-degree Celsius increments. Disabled when aircraft is in the air. |
| | | **OAT ↓** | Decreases the takeoff outside air temperature setting in one-degree Celsius increments. Disabled when aircraft is in the air. |
| | | **ATR ON** | Enables Automatic Thrust Reserve (ATR). Disabled when aircraft is in the air. |

| | | | |
|---|---|---|---|
| | | **ATR OFF** | Disables Automatic Thrust Reserve (ATR). Disabled when aircraft is in the air. |
| | | **BACK** | Returns display to previous softkey level |
| | | **ACCEPT** | Confirms the selected takeoff settings |
| | **LFE** | | Accesses softkeys for manually setting the Landing Field Elevation (LFE) |
| | | **FMS LFE** | Sets current flight plan destination elevation as displayed LFE |
| | | **+500 FT** | Increases currently displayed LFE value by 500 ft |
| | | **-500 FT** | Decreases currently displayed LFE value by 500 ft |
| | | **+50 FT** | Increases currently displayed LFE value by 50 ft |
| | | **-50 FT** | Decreases currently displayed LFE value by 50 ft |
| | | **ACCEPT** | Confirms the LFE setting and returns to the previous softkey level |
| | | **BACK** | Returns display to previous softkey level |
| | **STATUS** | | Displays the System-Status Page |
| | **ECS** | | Displays the System-ECS (Environmental Control System) Page |
| | **ELEC** | | Displays the System-Electrical Page |
| | **FUEL** | | Displays the System-Fuel Page |
| | **ICEPROT** | | Displays the System-Deice Page |
| | **ENG MNT** | | Displays the Engine Maintenance Page. Enabled only while aircraft is on the ground and engines are off. |
| | **BACK** | | Returns display to previous softkey level |




**CPDLC Softkeys**

| | | |
|---|---|---|
| **CPDLC** | | When available, accesses CPDLC softkeys. |
| | **LOGON** | Displays Logon screen for the CPDLC system |
| | **LOGOFF** | Displays Logoff screen for the CPDLC system |
| | **NEW** | Accesses New CPDLC message screen |
| | **DELETE** | Delete selected CPDLC message. |
| | **DEL ALL** | Delete all CPDLC messages. |
| | **BACK** | Returns display to previous softkey level |




**MAP Softkeys**

| | | |
|---|---|---|
| **MAP** | | Enables second-level Navigation Map softkeys |
| | **TRAFFIC** | Displays traffic information on Navigation Map |
| | **PROFILE** | Displays/removes Vertical Situation Display on Navigation Map Page |

| | | |
|---|---|---|
| | **TOPO** | Displays topographical data (e.g., coastlines, terrain, rivers, lakes) and elevation scale on Navigation Map |
| | **TERRAIN** | Displays terrain information on Navigation Map (not available with TAWS-A) |
| | **AIRWAYS** | Displays airways on the map; cycles through the following:<br>AIRWAYS: No airways are displayed<br>AIRWY ON: All airways are displayed<br>AIRWY LO: Only low altitude airways are displayed<br>AIRWY HI: Only high altitude airways are displayed |
| | **NEXRAD**<br>**or**<br>**PRECIP** | Displays NEXRAD weather and coverage information on the Navigation Map (optional)<br>Displays Connext Weather precipitation on Navigation Map (optional) |
| | **XM LTNG**<br>**or**<br>**DL LTNG** | Displays SiriusXM Weather lightning information on the Navigation Map (optional)<br>Displays Connext Weather lightning information on the Navigation Map (optional) |
| | **METAR** | Displays METAR flags on airport symbols |
| | **WX RADAR** | Displays the weather radar scan on the Navigation Map (optional) |
| | **BACK** | Returns to top-level softkeys |
| **DCLTR (3)** | | Selects desired amount of map detail; cycles through declutter levels:<br>DCLTR (No Declutter): All map features visible<br>DCLTR-1: Declutters land data<br>DCLTR-2: Declutters land and SUA data<br>DCLTR-3: Removes everything except the active flight plan |
| **SHW CHRT** | | When available, displays optional airport and terminal procedure charts |
| **CHKLIST** | | When available, displays optional checklists |

## UPDATING DATABASES

***CAUTION:*** *Never disconnect power to the system when loading a database. Power interruption during the database loading process could result in maintenance being required to reboot the system.*

***NOTE:*** *When loading database updates, the 'DB Mismatch' message will be displayed until database synchronization is complete, followed by turning system power off, then on. Synchronization can be monitored on the AUX-SYSTEM STATUS Page.*

***NOTE:*** *DO NOT use the database SD cards for any purpose other than database storage.*

In some cases it may be necessary to obtain an unlock code from Garmin in order to make the database product functional. It may also be necessary to have the system configured by a Garmin authorized service facility in order to use some database features.

If an error occurs during synchronization, an error message will be displayed, followed by the affected display in the Sync Status section of the Database Window. If synchronization completes on one display, but an error occurs on another, the error message will be displayed with the affected displays listed after it. When an error message is displayed, the problem must be corrected before synchronization can be completed. A power cycle is required to restart synchronization when 'Card Full' or 'Err' is shown.

| Error Message | Description |
|---|---|
| Canceled | Database synchronization has been canceled by removing the bottom SD card in display being updated |
| Card Full | SD card does not contain sufficient memory |
| Err | Displayed for all other errors that may cause the synchronization process to be halted |
| Timeout | System timed-out prior to the database transfer completing |

## Updating Basemap, SafeTaxi, Airport Terrain, Obstacle, and Airport Directory Databases

These databases may be copied to one Supplemental Data Card, then automatically synchronized to other card in the system:

1) With system power OFF, remove the MFD database card from the bottom card slot of the MFD.
2) Update the basemap, SafeTaxi, airport terrain, obstacle and/or airport directory databases on the MFD card.
3) Insert the MFD database card into the bottom card slot of the MFD.
4) Apply power to the system, check that the databases are initialized and displayed on the power-up screen. If a 'Verifying' message is seen, wait for the system to finish loading before proceeding to step 5.
5) Acknowledge the Power-up Page agreement by pressing the **ENT** Key or the right most softkey.
6) Turn the large **FMS** Knob to select the AUX Page group on the MFD.
7) Turn the small **FMS** Knob to select the System Status Page.
8) Monitor the Sync Status in the Database Window. Wait for all databases to complete synching, indicated by 'Complete' being displayed.
9) Remove and reapply power to the system.
10) Turn the large **FMS** Knob to select the AUX Page group on the MFD.
11) Turn the small **FMS** Knob to select the System Status Page.
12) Press the Display Database Selection Softkey to show database information for each display (**MFD1 DB** or **PFD1 DB**). Verify the correct database cycle information is shown for each database for each display.

## Updating Terrain, FliteCharts, and ChartView Databases

1) With system power OFF, remove the Supplemental Data Card from the bottom card slot of the MFD and PFD.
2) Copy the updated terrain database to both Supplemental Data Cards. Copy the updated FliteCharts or ChartView database to one Supplemental Data Card.
3) Insert the updated Supplemental Data Cards into the bottom card slot of the MFD and PFD. The Supplemental Data Card containing the FliteCharts or ChartView database is inserted in the MFD.

4) Apply power to the system, check that the databases are initialized and displayed on the power-up screen. A 'Verifying' message may be seen. If this message is present, wait for the system to finish loading before proceeding to step 5.

5) Acknowledge the Power-up Page agreement by pressing the **ENT** Key or the right most softkey.

6) Turn the large **FMS** Knob to select the AUX Page group on the MFD.

7) Turn the small **FMS** Knob to select the System Status Page.

8) Press the Display Database Selection Softkey to show database information for each display (**MFD1 DB** or **PFD1 DB**). Verify the correct database cycle information is shown for each database for each display.

9) Remove power from the system.

## Loading the Jeppesen Navigation Database as the Active Navigation Database

The Jeppesen Navigation Database that is loaded to internal memory as the active database will be used by the system.

***NOTE:*** *Loading the Jeppesen Navigation Database as the active database prior to its effective date will result in the expiration date on the power-up screen and the effective date on the AUX-System Status Page being displayed in yellow.*

***NOTE:*** *After the navigation database is loaded or copied, the top SD card may be removed.*

1) With the system OFF, insert the SD card containing the new navigation database version into the top card slot of the display (PFD1, PFD2 or MFD) to be updated (label of SD card facing left).

2) Turn the system ON. A prompt is displayed in the upper left corner of the display:

```
DO YOU WANT TO UPDATE THE STANDBY NAVIGATION DATABASE ON THE BOTTOM CARD?
THE STANDBY DATABASE WILL BE ACTIVATED UPON THE FIRST ON-GROUND POWER CYCLE ON OR
AFTER 00:00 SYSTEM TIME ON THE EFFECTIVE DATE.
            FROM            TO
REGION:     WORLDWIDE       WORLDWIDE
CYCLE:      1311            1312
EFFECTIVE:  26-AUG-2013     18-NOV-2013
EXPIRES:    23-SEP-2013     16-DEC-2013

NO WILL BE ASSUMED IN 21 SECONDS.
```

3) Press the **NO** Softkey to proceed to loading the active database.

4) A prompt similar to the following is displayed. Press the **YES** Softkey to update the active navigation database.

```
DO YOU WANT TO UPDATE THE ACTIVE NAVIGATION DATABASE?
SELECTING YES WILL OVERWRITE THE ACTIVE NAVIGATION DATABASE.
            FROM            TO
REGION:     WORLDWIDE       WORLDWIDE
CYCLE:      1311            1312
EFFECTIVE:  26-AUG-2013     18-NOV-2013
EXPIRES:    23-SEP-2013     16-DEC-2013

NO WILL BE ASSUMED IN 8 SECONDS.
UPDATING THE ACTIVE NAVIGATION DATABASE, PLEASE WAIT.
.
UPDATED 1 FILES SUCCESSFULLY!
PRESS ANY KEY TO CONTINUE.
CONTINUING IN 8 SECONDS.
```

5) After the update completes, the display starts in normal mode.

6) Turn the system OFF and remove the SD card from the top card slot.

7) Repeat steps 1 through 6 for the other displays (PFD1, PFD2 or MFD).

8) Apply power to the system and press the **ENT** Key to acknowledge the startup screen.

9) Turn the large **FMS** Knob to select the AUX Page group on the MFD.

10) Turn the small **FMS** Knob to select the System Status Page.

11) Press the Display Database Selection Softkey to show active navigation database information for each display (**MFD1 DB**, **PFD1 DB, PFD2 DB**). Verify the correct active navigation database cycle information is shown for each display.

## Loading the Jeppesen Navigation Database as the Standby Navigation Database

The purpose of the Standby Navigation Database is to allow the loading of the next cycle of the Jeppesen Navigation Database to the bottom SD card, prior to its effective date. (The Jeppesen Navigation Database is available from Jeppesen seven days prior to its effective date.)

***NOTE:*** *After the navigation database is loaded or copied, the top SD card may be removed.*

1) With the system OFF, insert the SD card containing the new navigation database version into the top card slot of the MFD.

**2)** Verify that an SD card is inserted in the bottom slot of each PFD and the MFD.

**3)** Turn the system ON. A prompt similar to the following is displayed.

```
DO YOU WANT TO UPDATE THE STANDBY NAVIGATION DATABASE ON THE BOTTOM CARD?
THE STANDBY DATABASE WILL BE ACTIVATED UPON THE FIRST ON-GROUND POWER CYCLE ON OR
AFTER 00:00 SYSTEM TIME ON THE EFFECTIVE DATE.
            FROM            TO
REGION:     WORLDWIDE       WORLDWIDE
CYCLE:      1311            1312
EFFECTIVE:  26-AUG-2013     18-NOV-2013
EXPIRES:    23-SEP-2013     16-DEC-2013

NO WILL BE ASSUMED IN 21 SECONDS.
```

**4)** Press the **YES** Softkey. The navigation database is copied to the SD card in the bottom card slot of the MFD.

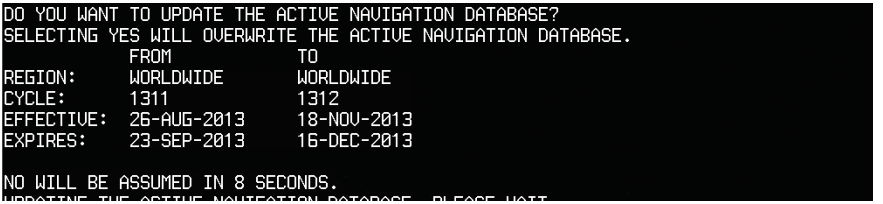
**5)** After the navigation database files are copied to the bottom SD card, the display will appear as shown in the following figure.

```
INITIALIZING SYSTEM

DO YOU WANT TO UPDATE THE STANDBY NAVIGATION DATABASE ON THE BOTTOM CARD?
THE STANDBY DATABASE WILL BE ACTIVATED UPON THE FIRST ON-GROUND POWER CYCLE ON OR
AFTER 00:00 SYSTEM TIME ON THE EFFECTIVE DATE.
            FROM            TO
REGION:     WORLDWIDE       WORLDWIDE
CYCLE:      1311            1312
EFFECTIVE:  26-AUG-2013     18-NOV-2013
EXPIRES:    23-SEP-2013     16-DEC-2013

NO WILL BE ASSUMED IN 18 SECONDS.
UPDATING STANDBY NAVIGATION DATABASE, PLEASE WAIT.
.
UPDATED STANDBY NAVIGATION DATABASE SUCCESSFULLY.
PRESS ANY KEY TO CONTINUE.
CONTINUING IN 9 SECONDS.
```

**6)** As instructed on the display, press any key to continue. The display will now appear as shown in the following figure.

```
DATABASE NAVIGATION WILL BE VERIFIED BEFORE USE.
DATABASE STANDBY NAV WILL BE VERIFIED BEFORE USE.
PRESS ANY KEY TO CONTINUE.
CONTINUING IN 6 SECONDS.
```

**7)** Press any key to continue. The display will now appear as shown in the following figure.


DO YOU WANT TO UPDATE THE ACTIVE NAVIGATION DATABASE?
SELECTING YES WILL OVERWRITE THE ACTIVE NAVIGATION DATABASE.
FROM TO
REGION: WORLDWIDE WORLDWIDE
CYCLE: 1311 1312
EFFECTIVE: 26-AUG-2013 18-NOV-2013
EXPIRES: 23-SEP-2013 16-DEC-2013
NO WILL BE ASSUMED IN 8 SECONDS.

**8)** Press the **NO** Softkey. The display now starts in normal mode. Since the database effective date is not yet valid, it should not be loaded as the active database. The display now starts in normal mode. Do not remove power while the display is starting.

**9)** Press the **ENT** Key to acknowledge the startup screen.

**10)** Turn the large **FMS** Knob to select the AUX Page group on the MFD.

**11)** Turn the small **FMS** Knob to select the System Status Page.

**12)** The new database is copied to the SD card in the bottom card slot of each PFD. Progress can be monitored in the SYNC STATUS field. When copying is finished, 'Complete' is displayed.

**13)** Turn system power OFF.

**14)** Remove the SD card from the top card slot of the MFD.

**15)** Turn system power ON.

**16)** Press the **ENT** Key to acknowledge the startup screen.

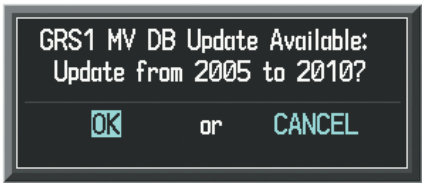
**17)** Turn the large **FMS** Knob to select the AUX Page group on the MFD.

**18)** Turn the small **FMS** Knob to select the System Status Page.

**19)** Press the Display Database Selection Softkey to show standby navigation database information for each display (**MFD1 DB**, **PFD1 DB, PFD2 DB**). Verify the correct standby navigation database cycle information is shown for each display.

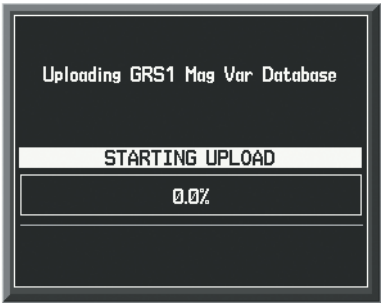
### Loading the magnetic field variation database update:

A copy of the current magnetic field variation database (MV DB) is included with the navigation database. At startup, the system compares this version of the MV DB with that presently being used by each AHRS (GRS1 and GRS2). If the system determines the MV DB needs to be updated, a prompt is displayed on the Navigation Map Page, as shown in the following figure.



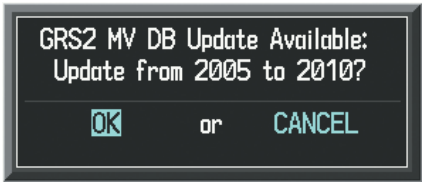

**GRS1 Magnetic Field Variation Database Update Prompt**

**1)** With 'OK' highlighted, press the **ENT** Key on the MFD. A progress monitor is displayed.



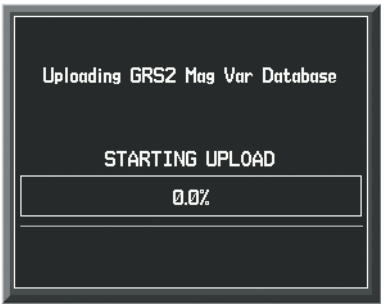

**Uploading Database to GRS1**

**2)** When the upload is complete, the prompt for the next GRS upload is displayed.




**GRS2 Magnetic Field Variation Database Update Prompt**

**3)** With 'OK' highlighted, press the **ENT** Key on the MFD. A progress monitor is displayed. When the upload is complete, the system is ready for use.




**Uploading Database to GRS2**

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